

Natural History in Early Modern France

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Natural History in Early Modern France

The Poetics of an Epistemic Genre

Edited by

Raphaële Garrod
Paul J. Smith



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This book stemmed from an enthusiastic moment 'In defence of Pliny' with Rowan Tomlinson, whose has spent the past decade researching the early modern reception of Pliny in particular and Renaissance *copia* in general. Pliny was not merely the inaccurate source of fanciful information on the natural world, his disfigured text did not only vindicate the humanist condemnation of the carelessness of medieval scribes; it was also a poetic matrix and that needed to be said. We tried to say so in September 2012 at a conference on *The Poetics and Epistemology of Natural History in Early Modern France / Poétique et épistémologie de l'histoire naturelle en France*, hosted by Newnham college, where I was then a junior research fellow: I am very grateful to Newnham college for its support.

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Raphaële Garrod

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Introduction. Knowledge and Literature: The Natural-Historical Description as Epistemic Genre?

Raphaële Garrod

1 Buffon and the Style of the Natural-Historical Description: Epistemic and Literary Concerns¹

In the first discourse of the first volume of his *Histoire naturelle* entitled “How to study natural history”,² Buffon delineates the natural-historical genre in both epistemological and rhetorical – or literary – terms.³ Natural history, he states, is concerned with the good definition of particulars: such definition consists of an accurate description supplemented by a history. Description mostly accounts for the external characteristics of the particular – size, shape, colour, situation and figures of parts in rest and in motion – whereas the history mostly focuses on its ‘habits’ (generation, nutrition etc.) and behaviour, and on its potential usefulness to humans. The descriptor needs to demonstrate judgment by selecting the relevant salient traits necessary to compose the holistic yet precise depiction of the particular described, without drowning the reader in minute details. For Buffon, the content of the natural-historical description is therefore quite set: it is observation made into words.⁴ Its purpose

1 The research for this introduction was carried out with the support of the project *Genius before Romanticism: Ingenuity in Early Modern Art and Science* funded by the European Research Council under the European Union's Seventh Framework Programme (FP7/2007-2013)/ERC grant agreement no 617391.

2 Buffon Georges-Louis Leclerc, Comte de, “Premier Discours: De la manière d'étudier et de traiter l'Histoire naturelle”, in *Histoire naturelle, générale et particulière, avec la description du cabinet du Roy* (Paris, L'Imprimerie royale: 1749) 1.

3 The primary definition of genre assumed here is the specific one provided by the *Oxford English Dictionary*: ‘1b. *spec.* A particular style or category of works of art; esp. a type of literary work characterized by a particular form, style, or purpose.’

4 Observation is reliant on the possibility of the unprejudiced, undirected gaze – ‘il faut voir presque sans dessein’ (one needs to look almost without aim), Buffon, “Premier discours” 6 – repeatedly applied to the same object, thus able to provide the foundations for legitimate comparisons and the elaboration of rules: it involves industry that is, the minute, systematic attention to details. Observation thus provides the model for empirical knowledge in

is to provide the best possible definition of the thing described. The natural-historical description should therefore be written in an appropriate ‘middle style’, whose clear and distinct prose operates as the linguistic equivalent of truthful observation. According to Buffon, this style should therefore be purely denotative, devoid of rhetorical flourishes, let alone jokes or puns.⁵ From an epistemological perspective, Buffon’s ideal natural-historical description amounts to a definition, that is, a systematic delineation of the essence of its object: it marks the end point in the history of the revision of the scholastic definition understood as the compound of a genus and a specific difference: Buffon’s critique of the limits of division and classification is part of this revision.⁶ From a rhetorical point of view, Buffon revokes the whole allegorical and emblematic tradition which revelled in the poetic possibilities offered by fanciful etymologies; he also denounces the fabulous superfluity of humanist *copia*, which, to him, is symptomatic of the indiscriminate collection of data that plagued Renaissance natural historians. While he praises Aldrovandi for the way in which he structured his descriptions and for their accuracy, he also chastises him for his love of compilation.⁷ No need to compile everything ever

Buffon’s *Histoire Naturelle*, whose account in this respect rings Baconian echoes, or in all likelihood, testifies to the influence of the Royal Society on his views. See Anstey in this volume.

- 5 ‘pour décrire exactement, il faut avoir vû, revû, examiné, comparé la chose qu’on veut décrire, et tout cela sans préjugé [...] sans quoi la description n’a plus le caractère de la vérité, qui est le seul qu’elle puisse comporter. Le style même de la description doit être simple, net et mesuré, il n’est pas susceptible d’élévation, d’agréments [...]’ (exact description requires one to look time and again, to examine, to compare the thing one wants to describe – to do all this without prejudice [...] otherwise the description no longer bears the mark of truth, which is the only one it should bear. The style of the description itself should be simple, neat and measured, it does not welcome either rhetorical inflations or flourishes [...]). Buffon, “Premier discours” 25.
- 6 ‘Il faut diviser ce tout en différentes classes, partager ces classes en genres, sous-diviser ces genres en espèces, et tout cela suivant un ordre dans lequel il entre nécessairement de l’arbitraire. Mais la Nature marche par des gradations inconnues, et par conséquent elle ne peut pas se prêter totalement à ces divisions.’ (one must divide this whole into different classes, split these classes into genres, subdivide these genres into species, and all this according to a given order which always entail some arbitrariness. Yet Nature’s progress happens in unknown gradations, and cannot therefore lends itself fully to these divisions). Buffon, “Premier discours” 7. Since Pliny’s prefatory letter to Vespasian, the idea that any systematic survey of nature is doomed to failure, albeit a grand, and dignified one, has become commonplace. Pliny the Elder, “Praefatio” *Natural History* 1. 15.
- 7 ‘Je me représente un homme comme Aldrovandi [...] je le vois [...] lire successivement les anciens, les Modernes, les Philosophes, les Théologiens, les Jurisconsultes, les Historiens, les Voyageurs, les Poètes, et lire sans autre but que de saisir tous les mots, toutes les phrases qui ont de près ou de loin rapport à son sujet’ (I imagine a man like Aldrovandi [...] I see him read systematically ancient and modern writers, philosophers and theologians, lawyers and

written about oxen and cockerels in order to outline their proper natural history: in fact, proper natural history ends up lost in this compiled mess.⁸

Buffon's account of the natural-historical description therefore seems at first glance to exemplify what Gianna Pomata has called an epistemic genre, that is a 'standardised textual format' designed for 'the expression and dissemination' of a specific type of knowledge.⁹ Buffon's natural-historical description is prescriptive and provides a protocol to a potential community of natural historians, thereby allowing for a uniform and regulated recording of observation, understood as a discriminating practice shared by experts.¹⁰ Wit, wonder, and fable seem dismissed as irrelevant 'written mess' from the Buffonian ideal of natural-historical description as epistemic genre.

Envisaged from a rhetorical and literary perspective, Buffon's prescription suggests that these features are banned from the invention of the natural-historical description; however, they reappear as desirable features of elocution. Buffon acknowledges that the wondrous, the witty and the fabulous are particularly effective pedagogical ploys and means to ensure the *captatio benevolentiae*: they delight readers and draw them in, which legitimizes their presence. The style of the natural-historical description ought to be varied in order to prevent the reader's boredom: to that end, striking anatomical features or surprising possible uses of the particular described can be brought to the fore.¹¹ Rhetorical variation and fabulous ornaments mirror the importance

historians, travellers and poets; he reads with no aim other than to catch all the words, all the sentences that relate more or less closely to his topic). Buffon, "Premier discours" 27.

8 'Qu'on juge après cela de la portion d'Histoire Naturelle qu'on doit s'attendre à trouver dans ce fatras d'écritures.' (After this, I leave you judge to decide how much natural history you should expect to find in all that written mess). Buffon, "Premier discours" 28.

9 Pomata G., "Observation Rising", in Daston L. – Lünbeck E. (eds.), *Histories of Scientific Observation* (Chicago: 2010) 48.

10 See Pomata, "Observation Rising" 51 on the importance of careful scrutiny and expert judgment in the early modern meaning of *observatio*. Laurent Pinon has suggested that printing contributed to the standardization of the natural-historical description within the network of the Republic of Letters. Pinon L., *Les Livres de zoologie à la Renaissance: objets de mémoire et instruments d'observations*. Doctoral dissertation, Centre d'Études Supérieures de la Renaissance (Tours: 2000).

11 'lorsque dans l'intérieur du corps de l'animal il y a des choses remarquables, soit par la conformation, soit pour les usages qu'on en peut faire, on doit les ajouter ou à la description ou à l'histoire [...] de même pour rendre les descriptions moins sèches, y mêler quelques faits, quelques comparaisons, quelques réflexions sur les usages des différentes parties [...] faire en sorte qu'on puisse vous lire sans ennui aussi bien que sans contention.' (When there are remarkable features inside the body of the animal, either because of their morphology, or because of their potential uses, these must be added to the description or to the history [...] similarly, in order to render the description less dry, include some noticeable facts, some comparisons, some thoughts on the different uses of body

of variety in training one's observational abilities: varying the perspectives in the repeated exposure of the same object to the viewer's gaze is a fundamental prerequisite of good empirical observation. Thus, because children get easily bored and distracted, piquing their interest by shifting perspectives or even by appealing to fabulous and 'untrue' anecdotes relating to the object observed are wholly justified pedagogical strategies.¹² Buffon thus reminds the reader that the literary traits of the natural-historical description – its reliance on fables, its vivid summoning of wonders and their integration into symbolic systems of meaning supposedly discarded by empiricism – are integral to the pedagogical and rhetorical regimes of the natural-historical description as an epistemic genre *en quête de lecteurs*.

2 In Defense of Pliny: *Res* and *Verba*, Natural History as Literature

Buffon's statements on natural history as literature are not an exception: they are yet another take on a humanist commonplace whose variants can be found in his Renaissance predecessors, namely the emphasis on the relationship between *res* and *verba*, between encyclopaedic erudition, lexical accuracy, and stylistic virtuosity in the natural-historical description. While historians have highlighted the fact that the early modern reception of Pliny in medicine and in cosmography especially amounts to its endless critique and emendation – of a corrupt text, of fanciful natural-historical descriptions¹³ – the recent literary scholarship of Rowan Tomlinson on the French reception of Pliny has noted the permanence of the Plinian text in both vernacular translations and in the popular and miscellaneous genres of books of wonders and recipe books. She has also pointed at the importance of some of these translations – in this case, Antoine du Pinet's 1562 *Le Monde de Pline Second* – in recasting Pliny as a reliable natural historian whose methods contributed to the rise of

parts [...] write in such ways as are necessary to prevent either boredom or exertion). Buffon, "Premier discours" 31.

12 'les enfans [...] revoient avec indifférence, à moins qu'on ne leur présente les mêmes objets sous d'autres points de vûe; et au lieu de leur répéter simplement ce qu'on leur a déjà dit, il vaut mieux y ajouter des circonstances, même étrangères ou inutiles; on perd moins à les tromper qu'à les dégoûter.' (Children [...] see things again with indifference, unless we present them with the same object from different perspectives; and instead of merely repeating what we have already told them, we are better off adding other circumstances including extraneous or useless ones: there is less to lose in deceiving than in boring them). Buffon, "Premier discours" 7.

13 See Ogilvie B., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2004) 121-139.

empiricism. Tomlinson argues that, according to Du Pinet, Plinian empiricism partly accounts for the supposed obscurities of Pliny's style – a commonplace criticism in Renaissance editorial prefaces to Pliny, Tomlinson notes. In fact, Pliny's obscure style testifies to his quest for lexical accuracy and his genuine engagement with the practical knowledge of Roman craftsmen in order to find the right *verba* for the right *res*: corrupted by a faulty scribal tradition and the passing of time, his efforts became jargon for the Renaissance reader.¹⁴ This stylistic concern with making sense of Plinian obscurities is an often forgotten starting-point of the Renaissance natural-historical 'revolution', as Tomlinson rightfully points out, which took the natural historian from the desk to the field, and turned erudite members of the Republic of Letters into empiricists.¹⁵ Thus Du Pinet justified the need for a French translation of the *Natural History* on those very stylistic grounds: Pliny's Latin had become impossible to understand because Pliny ventriloquized the specialist vocabularies of ancient craftsmanship and trades.¹⁶ Du Pinet did not summon the ghosts of Roman craftsmen to help him carry out his translation: he went and spoke to contemporary French ones in their shops instead.¹⁷ Seventy years later, the same

14 Tomlinson R., "Plusieurs choses qu'il n'avoient veuës": Antoine du Pinet's Translation of Pliny the Elder", *Translation and Literature* 21, 2 (2012) 145-161.

15 See for example, Guillaume Rondelet's warning against natural history as erudition alone: 'Nam qui piscium, plantarum, atque aliarum hujusmodi rerum singularum historiam conscribit, si fit in tenui re, si perpetuo domi et in Bibliotheca sedeat, si fit illi cum libris solis mutis magistris consuetudo, pauca pro multis, saepe incerta pro certis, falsa pro veris proponens intemperanter abutetur, et otio et literis.' (For indeed whoever writes the history of fish, plants, and any particulars of this kind, when it comes to the most subtle topic, if he sits constantly at home or in the library, and gets used to the sole company of books, those mute masters, he will highlight the few instead of the many, what is uncertain instead of what is certain, what is false instead of what is true, he will often be abused without moderation by both his leisure and his learning). Rondelet Guillaume, *Liber de piscibus marinis* (Lyons, Matthieu Bonhomme: 1554), Dedicatory epistle fol. azv.

16 'Pline a été tant affecté en son style que quelquefois il parle en Astrologue, ou en Cosmographe, et d'autre fois il charge un stile de Medecin, ou de Chirurgien, parlant la plupart du temps en espicier et Apoticaire [...] et le tout en termes de son temps, et si propres que, pour les entendre, faudroit susciter quelques Esprits des Artisans du passe.' (Pliny's style was so plagued with affectation that he sometimes speaks like an astrologer, or a cosmographer, and at other times he is overloaded with a physician or surgeon's style, speaking mostly as a trader of spices and an Apothecary [...] the whole lot, cast in the vocabularies of his time, which were so specialised that in order to understand them, one would have to summon some spirits of past craftsmen). Du Pinet Antoine (trans.), *Le Monde de Pline Second* (Lyons, Claude Senneton: 1562) fol. iir, commented upon in Tomlinson, "Antoine du Pinet's Translation of Pliny the Elder".

17 'Et neantmoins me remettant devant les yeux [...] les discours qu'il m'a fallu avoir avec Paisans, et Artisans, comme Fondeurs, Arpailleurs, Gens de Mine, Affineurs de Mine,

rhetorical concern with up-to-date linguistic accuracy in the service of pulpit eloquence fuelled the virtuoso natural-historical pieces of one of Du Pinet's attentive reader, the Jesuit Estienne Binet, whose 1621 *Essay des merveilles de nature et des plus nobles artifices* celebrated the wonders of nature and art and provided the French Jesuit schoolroom with a very successful textbook of *progymnasmata* – or exercises of rhetorical and poetic composition in French – until the end of the century.¹⁸

That natural history was also a poetic pursuit for which the Plinian text provided a good paradigm is evidenced in Mattioli's preface to his 1544 commentaries on Dioscorides, a European best-seller of *materia medica*, where Pliny is the first authority mentioned. According to Mattioli, natural history was the learned delight of kings and a topic revered by ancient poets. Thus, kings and poets alike found glory by discovering and naming a plant, or celebrating it in verse.¹⁹ The idea that natural history is an apt subject matter for poetic

Monnoyeurs, Peintres, Verriers, Pottiers, Orfevres, Imageurs, Ingeniaires, Massons, Menuysiers, Lapidaires, Espiciers, Teinturiers, Chirurgiens, et plusieurs autres, pour parler respectivement selon les termes de chasque Art, il m'est advis que c'est un songe.' (And yet when I reminisce about the conversations I needed to have with peasants, craftsmen, artisans, such as founders, gold-finers, miners, metalworkers, money-makers, painters, glass-makers, potters, jewellers, image-makers, engineers, masons, carpenters, stone-cutters, spice traders, dyers, surgeons, and many others, to speak in turn in accordance with the vocabularies of each art, it seems to me it was all a dream.) Du Pinet (trans.), "Au lecteur debonnaire", in *Le Monde de Pline* fol. 3r.

18 'C'est une piece du tout necessaire à l'Eloquence Françoisse, autrement les plus habiles font des fautes insupportables. Peu de gens parlent des artifices, et des choses qui ne sont de leur mestier, sans faire de vilains barbarismes. [...]. Combien pensez-vous qu'il y ait d'affineurs qui rient au sermon, quand ils oyent dire aux jeunes Predicateurs, que le sang de bouc mollit le Diamant, et que le marteau et l'enclume se casseront plutost que jamais esbrecher la dureté opiniastre du mesme Diamant.' (This is a most necessary piece for French eloquence – otherwise even the most skilful [orators] make unbearable mistakes. Few are able to speak about artefacts, or things that do not belong to their trade, without being guilty of vile barbarisms. [...] How many metal workers, do you think, laugh during the sermon in church when they hear young preachers say that goat blood softens diamonds, and that anvils and hammers will break rather than ever make a dent in that same, stubbornly hard, diamond?) Binet Estienne, "Epistre nécessaire au lecteur judicieux", in *Essay des merveilles de nature et des plus nobles artifices, piece tres necessaire a tous ceux qui font profession d'eloquence* (Paris, Romain de Beauvais: 1622) 3v-4r. The view derided here can be found in.... Pliny the Elder, *Natural History* xx, 1.

19 'quod plantarum peritiam aut inventio, praeter eam quam maximam secum adfert voluptatem et utilitatem, gloriam quoque et laudem pariat sempiternam, noverunt non tantum universi orbis sapientes, diligentissimi rerum indagatores, sed summi etiam ac potentissimi reges.' (The wise men all over the globe, careful hunters of all things, but also the greatest and most powerful kings, knew that expert knowledge and discovery of plants brings with it the greatest pleasure and usefulness, and also grants everlasting glory and

invention and a king's delight also features in Antoine du Pinet's translation of Pliny.²⁰ Just as Alexander found a welcome respite in reading Homer during his conquests, and August was so taken by Virgil that he celebrated him in writing, Du Pinet hopes that his Pliny will provide the king with honest and fruitful entertainment – all the more so that, unlike Homer or Virgil whose poetry 'was only to be heard', Pliny's encyclopaedia provides food for thought.²¹

The early modern natural-historical description was therefore also the quarry of poets; it could prompt delight and raised the question of lexical accuracy; it displayed a rhetoric both concerned with vividness and layered with moral and theological symbolism. *Enargia* and *hypotyposis*, intended to put vividly the particular described 'under the eyes' of the reader, are thus staples of the natural-historical description: Tomlinson reminds us that praising Pliny's energetic descriptions was also commonplace in prefaces to his editions and commentaries.²² Wonders were a type of *res* which lent itself particularly well to such energetic descriptions. They challenged the possibility to be named accurately, either prompted delight or struck the reader's imagination, and spurred theological and moral interpretations: they were the perfect instantiations of these rhetorical and poetic features of the natural-historical description. A case in hand is Pierre Belon's 1551 *L'Histoire naturelle des estranges poissons marins, avec la vraie peinture et description du Daulphin*,

praise.) Mattioli Pietro Andrea, *Commentarii in libros sex pedacii dioscoridis Anazarbei, de medica materia* (Venice, Vincentius Valgrisius: 1554) fol. a2r; and 'Sunt etiam num poetae quam plurimi, in quorum poematibus Sole clarius lucet, rem herbariam et antiquam fuisse, et semper laudibus decantatam. Qua in re et ipsi nedum insigne, sed etiam perpetuum nomem sibi conciliarunt. Ex Graecis quidem produntur Orpheus, Musaeus, Hesiodus, Homerus, ac Rufus Ephesius, quem testatur Galenus libros quinque de herbis, versibus scripsisse' (Even up till now, there are very many poets, in whose poems the sun shines brighter, where botany features as an ancient topic, always sung with praises. In this they might not have carved primarily a great name for themselves, but at least an enduring one. Among the Greeks these were Orpheus, Musaeus, Hesiod, Homer and Rufus Ephesius: Galen states in his fifteen books on herbs that he wrote verse.) Mattioli, *Commentarii* fol. a2v.

20 However, Tomlinson rightfully notes that Du Pinet, who also translated Mattioli's commentaries on Dioscorides (printed for the first time in 1566), displayed a reformer's suspicion towards fables and fiction in the preface to that translation: Tomlinson, "Antoine Du Pinet's Translation of Pliny the Elder".

21 'Et neantmoins tout cela ne seroit que de donner du plaisir aux oreilles. Mais ce monde qui se presente a vostre magesté portant l'escharpe françoise, n'est seulement accompagné de plaisir, ains de proffit et de contentement inenarrable.' (And yet all this was only intended to delight one's ears. But this 'world' that is put in front of your majesty with its French banner, does not only bring pleasure, but also profit and satisfaction beyond words.) Du Pinet, Antoine (trans.), "Au Roy tres-chrestien" in *Le Monde de Pline*, fol. iir.

22 Tomlinson, "Du Pinet's Translation of Pliny the Elder".

et de plusieurs de son espece, observee par Pierre Belon du Mans: the title indicates the natural-historian's emphasis on strangeness, and the preface bolsters the claims that the vivid natural-historical description – or *demonstration* – is a necessary supplement to the visual representation or *pourtraict*. The emblematic and heraldic values of the dolphin and its representations in devices (*devises*) provide Belon with the *captatio benevolentiae* appropriate to the prestigious dedicatee of the book.²³

So far, historians have focused on these rhetorical and poetic features inasmuch as they shed light on the early modern epistemic shaping of natural history into a systematic knowledge of natural particulars, whose history has provided historians of science with a different narrative of early modern epistemic shifts. Thus Pomata and Siraisi, but also Daston and Park have highlighted significant stylistic constants of the early modern natural-historical description: it was concerned with the description of particulars *only*, those *singularitez* mentioned in the titles of travel narratives and of civil history;²⁴ it often focused on aberrations, rarities, or wonders, partly because they were anomalies raising questions within the functional biology for which the Aristotelian type of natural history was supposed to provide data.²⁵ Guillaume Rondelet's doubt about the morphology of the sea lion in his *De piscibus*

23 'je me suis mis en devoir, de vous rendre les vraies peintures des Daulphins, retirees tant du naturel que de l'antique [...] afin de les vous presenter mais non sans vous en faire demonstration: car j'ay aussi escript toute l'histoire qui appartient a la nature du Daulphin.' (I set about to hand over to you the true depictions of dolphins, lifted from the life as well as from ancient representations [...] in order not only to show them but also to explain their appearance to you: for I have also written the whole history that belongs to the Dolphin's nature.) Belon Pierre, *L'Histoire naturelle des estranges poissons marins, avec la vraie peinture et description du Daulphin, et de plusieurs autres de son espece, observee par Pierre Belon du Mans* (Paris, Regnaud Chaudiere: 1551) 2 (dedicatory epistle to the Cardinal de Chastillon). Odet de Coligny, Cardinal de Chastillon, was made Cardinal at the occasion of the marriage of Catherine of Medicis with the then *dauphin* or heir to the throne, the future Henri II, in 1533.

24 A few examples: Lemaire de Belges Jean, *Les Illustrations de Gaule et singularitez de Troie*, 2 vols. (Paris, Geoffroy de Marnef: 1512-1513), a mythical history of France; Belon du Mans Pierre, *Les Observations de plusieurs singularitez et choses memorables, trouuees en Grece, Asie, Judée, Egypte, Arabie et autres pays estranges* (Paris, Guillaume Cavellat and Gilles Corrozet: 1554); Thevet André, *Les Singularitez de la France Antarctique, autrement nommez Amerique* (Paris, chez les heritiers de Maurice de La Porte: 1558).

25 Maclean I., "White Crows, Graying Hair, and Eyelashes: Problems for Natural Historians in the Reception of Aristotelian Logic and Biology from Pomponazzi to Bacon", in Pomata G. – Siraisi N. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge M.A.: 2005) 147-180; on natural particulars and on the history of emotional and epistemic responses to the monster as marvel, see Daston L. – Park K., *Wonders and the Order of Nature (1500-1750)* (New York: 2001) 135-172 and 173-214.

belongs here.²⁶ This alternative narrative of the emergence of natural history indeed highlights significant continuities between the humanist textual culture of emendation and the rise of empiricism, thus providing another unexpected route into, and much needed revision of, the traditional historiography of the Scientific Revolution. Siraisi and Pomata's volume on *historia* provided the foundation for this revision by highlighting the relevance of *historia* to both 'empiricism and erudition': both antiquarianism and the emerging discipline of natural history involved the close, expert examination – of ancient texts or of diseased bodies – over an extended period of time, that is, both involved *observatio* and its recording in set, written forms.²⁷ For Pomata and Siraisi, these types of *historiae* as set descriptions constitute epistemic genres whose specific textual format foster a systematic and transmissible knowledge of particulars; their importance had been mostly overlooked by scholars who had focused on *historia* as a 'literary' or 'rhetorical' genre, identified with the *mise en récit* and exemplary status of human, and in particular, civil, history. The historiographical field has answered the call of the *Historia* volume for a history of natural history as epistemic genre. Several important studies have thus focused on textual practices such as compilation,²⁸ the authorization of autopsy,²⁹ the theological, moral and epistemic rationales behind the structure of the natural-historical text,³⁰ or the relationship between text and

26 'Monstrum est id, quod id exhibemus et perfectum animal, partibus nullis ad natandum aptis praeditum. Quamobrem quum dubitarem existisset ne revera aliquando monstrum istud marinum, Gisbertus Germanus qui Romae medicinam facit, vir proculdubio in rerum cognitione praecellens et minime vanus, omni asseveratione affirmavit certo se scire, non diu ante obitu Pontificis Pauli tertii centucellis captum in medio mari fuisse" (This is a monster that we are showing here, and a complete animal – none of its parts are fit for swimming. In the light of which, as I therefore doubted if there had ever existed in reality such a marine monster; Gisbert the German, who practises medicine in Rome, a man that I deem outstanding in the knowledge of things and least vain, asserted most vehemently that he knew with certainty that this was captured off the coast of Civitavecchia, not long before the death of pope Paul the third.) Rondelet, "De monstro leonino", in *Liber de piscibus* 491.

27 Pomata, "Observation Rising: Birth of an Epistemic Genre, 1500-1650" 45-80.

28 On compilation and the incremental modes of writing of Conrad Gessner, see Blair A., *Too Much to Know: Managing Scholarly Information before the Modern Age* (Yale: 2010), and "Conrad Gessner's Paratexts", *Gesnerus* 73, 1 (2016) 73-123.

29 Kusakawa S., *Picturing the Book of Nature: Image, Text and Argument in Sixteenth-Century Human Anatomy and Medical Botany* (Chicago: 2012) 107-108; Pinon, "Les Livres de Zoologie".

30 On the epistemic (especially logical) structures of the natural-historical description see Kusakawa, *Picturing the Book of Nature* 103-107 and Glardon P., *L'Histoire naturelle au XVI^e siècle: Introduction, étude et édition critique de La Nature et diversité des poissons (1555) de Pierre Belon* (Geneva: 2011); On natural-theological and moral frameworks, see Ogilvie B.,

images.³¹ Others have unearthed the economic and social underpinnings of the natural-historical description, be they collective observation and its various instances,³² the Renaissance development of a European culture of curiosity enthusiastically bolstered by collectors,³³ or the promotion by the state or empire of a systematic knowledge of nature.³⁴ Overall, the history of the natural-historical description as epistemic genre has mostly disclosed the 'death of the marvel' and the exclusion of wonder, expressed in the increasingly laconic and uniform record of a set of carefully selected characteristics intended to facilitate both the categorization of natural particulars and clear communication within the community of naturalists.³⁵ This trajectory thus seems to concur with the Buffonian dismissal of the Renaissance *copia* in favour of leaner and stylistically clearer descriptions. *Copia*, the rhetorical expression of the powers of invention for Renaissance authors, has become

"Natural History, Ethics, and Physico-Theology", in Pomata – Siraisi (eds.), *Historia* 75-104; on symbolic and especially emblematic regimes of signification, see Ashworth W.B. Jr, "Emblematic Natural History of the Renaissance", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 17-37.

- 31 See Kusakawa, *Picturing the Book of Nature*; Daston, "Epistemic Images", in Payne A. (ed.), *Vision and Its Instruments: Art, Science and Technology in Early Modern Europe* (Pennsylvania: 2015) 1-13.
- 32 On collective observation and natural history in academies, see Freedberg D., *The Eye of the Lynx: Galileo, His Friends, and the Beginnings of Modern Natural History* (Chicago: 2003), for seventeenth- and eighteenth-century France, see Roche D., "Natural Histories in the Academies", in Jardine – Secord – Spary (eds.), *Cultures of Natural History* 127-144. Florike Egmond has studied in detail the international network of naturalists, apothecaries and collectors that Carolus Clusius (Charles de l'Écluse) relied on: Egmond F., *The World of Carolus Clusius: Natural History in the Making (1550-1610)* (London: 2014). See also Enenkel K. – Smith P.J. (eds.), *Zoology in Early Modern Culture* (Boston – Leiden: 2014), and Enenkel K. – Smith P.J. (eds.), *Early Modern Zoology: The Construction of Animals in Science, Literature and the Visual Arts*, 2 vols (Boston – Leiden: 2007).
- 33 On natural history as a curious pursuit relating to collecting and cabinets of curiosities, see Daston – Park, *Wonders and the Order of Nature* 303-328; Findlen P., *Possessing Nature: Museums, Collecting, and the Making of Science in Early Modern Italy* (Berkeley: 1994), and Whitaker K., "The Culture of Curiosity", in Jardine – Secord – Spary (eds.), *Cultures of Natural History* 75-90.
- 34 On the institutional frameworks underpinning the establishment of natural history as a scientific discipline in its own right, see Spary E.C., *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: 2000).
- 35 Lorraine Daston has argued along those lines in Daston, L., "Description by Omission: Nature Enlightened and Obscured", in Bender J. – Marrinan M. (eds.), *Regimes of Description: In the Archives of the Eighteenth Century* (Stanford: 2005) 12-24. She has further formulated the epistemic significance of what is *visually* represented or not in her account of epistemic images as cognitive substitutes for their referent: Daston, "Epistemic Images" 1-13.

'useless erudition' for Buffon; by contrast, his stylistic ideal of natural-historical description testifies to the exercise of good judgement by the naturalist able to select the relevant characteristics only.³⁶

Yet all the rhetorical and poetic elements of the natural-historical description are still mentioned in Buffon's reflections on how to write natural history, and while some take on different epistemic contents, others remain very stable. Thus *copia* still features in Buffon, but as a quality of the *res* rather than the *verba*. It is the *copia* of the world proper which deserves the labels of wondrous and marvellous: yet such wonders denote the limits of rational systematization. The *caveat* partly rings Plinian echoes: wonders in Pliny often instantiate the irreducible variety of nature, its resistance to rational systems and the hold fortune has over it.³⁷ Buffon also notes that the excesses of rationalist systematisation led to the hair-splitting pedantry of precise nomenclature.³⁸ Jargon thus reappears as a feature of the natural-historical style stemming from an overly rationalist concern with clarity and distinction rather than from the obscurities of the lost culture of ancient Rome.³⁹ Buffon finally suggests that the remedy to this lexical plague is visual mnemotechnics: *enargia* is no longer the prerogative of the natural-historical text appealing to its reader's imagination, but of the natural-historical image appealing to his memory.⁴⁰

36 'nos prédécesseurs cherchoient comme nous, mais ils ramassoient tout ce qui se présentoit, au lieu que nous rejetons ce qui nous paroît avoir peu de valeur, et que nous préférons un petit ouvrage bien raisonné à un gros volume bien sçavant' (our predecessors, like us, carried out enquiries; but they gathered everything they came across, whereas we dismiss what we consider worthless, and we would rather a little book that is neatly reasoned than one fat, erudite volume). Buffon, "Premier Discours" 28.

37 See Beagon M., "The Curious Eye of the Elder Pliny", in Gibson R. – Morello R. (eds.), *Pliny the Elder: Themes and Contexts* (Leiden – Boston: 2011) 71-88.

38 'trop petit pour cette immensité, accablé par le nombre des merveilles, l'esprit humain succombe: il semble que tout ce qui peut être, est; la main du Créateur ne paroît pas s'être ouverte pour donner l'être à un certain nombre déterminé d'espèces; mais il semble qu'elle ait jeté tout-à-la fois [...] une infinité de combinaisons harmoniques et contraires.' (too small for this boundless whole, weighed down by its countless marvels, the human mind is defeated. It seems that all that can be is: the Creator's hand seems to have opened to release not so much a defined number of species, but rather, to throw everything in at once [...] an infinite number of harmonious and contrary combinations.) Buffon, "Premier Discours" 11.

39 See the critique of jargon in botany; for Buffon, it is the result of overly systematic methods of classification: Buffon, "Premier Discours" 16.

40 'un homme auroit plutôt fait de graver dans sa mémoire les figures de toutes les plantes, et d'en avoir des idées nettes, ce qui est la vraie Botanique, que de retenir tous les noms que les différentes méthodes donnent à ces plantes [...] la langue est devenue plus difficile que la science.' (a man would sooner imprint in his memory the figures of all plants, and have clear ideas of them – which is what True Botany consists of – than memorize all

The early modern natural-historical description thus retained its rhetorical and poetical features from Pliny translated by Du Pinet to Buffon: and while their epistemic functions sometimes varied (but not always), this volume purports that their aesthetic appeal remained constant. Buffon's own remarks on the importance of wonders, fictions and fables in natural history – as enticing pedagogical ploys and wondrous springboards to a religious experience of Creation – suggest that the natural-historical description never ceased to operate as poetry or literature generating delight in its own right. Alongside the reappraisal of the aesthetic and formal qualities of the natural-historical image as art,⁴¹ scholars of early modern literature have begun to emphasize the contribution of the early modern natural-historical description to the emergence of our modern understanding of literature, from the Renaissance to the Enlightenment.⁴² This volume is part of this scholarly attempt. The rhetorical and poetic features of Plinian natural history – the compilatory *copia* of words and things, the vivid representations of wonders successfully resisting observational denials, natural particulars made symbols and delivering theological and moral truths alongside natural knowledge – are the perspectives through which the contributors of this volume have intended to sketch a history of the early modern French natural-historical description, from Belon to Leschenault.

3 The Poetics of Natural History in Early Modern France

Early modern France from the Renaissance to the Enlightenment provides a valuable and in some ways unique testing ground of the various poetics of the natural-historical description as a literary genre.

the names of these plants derived from these various methods [...] language has become more difficult than science.) Buffon, "Premier Discours" 16.

41 See Marcaida Lopez J.R., *Arte y Ciencia en el Barroco Español* (Madrid: 2014), Blake McHam S., *Pliny and the Artistic Culture of the Italian Renaissance* (New Haven, Conn.: 2013), Spary E.C., "Scientific Symmetries", *History of Science* 42 (2004) 1-46.

42 The natural-historical description of the eighteenth century, which marks the golden age of the discipline, was the first to be fully envisaged from a literary and rhetorical perspective alongside an epistemic one. Paradis S., "Les Descriptions animalières dans l'*Histoire Naturelle* de Buffon: entre le vraisemblable de l'écrivain et le vrai du savant", *@nalyse* 9, 1 (2014), <https://uottawa.scholarsportal.info/ojs/index.php/revue-analyses/article/viewFile/967/827>; Stalnaker J., *The Unfinished Enlightenment: Description in the Age of the Encyclopaedia* (Cornell: 2010) 29-96; Sundberg Wall C., *The Prose of Things: Transformations of Description in the Eighteenth Century* (Chicago: 2014) 70-96. For French Renaissance literature, see Tomlinson R., *Inventive Inventories: Lists, Literature, and Natural History in Renaissance France* (Oxford: forthcoming).

In the Renaissance, France does not stand out from the European Republic of Letters in that its natural historians write paradigmatic examples of the humanist natural-historical *summae* stemming from *materia medica* – the main figure here being Guillaume Rondelet in Montpellier, renowned for his history of fish – as well as from cosmography: Pierre Belon wrote both natural histories and cosmographies in the 1550s.⁴³

The landscape becomes more diverse and idiosyncratic in the seventeenth century. In the traditional historiography of the Scientific Revolution, France is the cradle of the Cartesian, mechanical philosophy, which foregrounds a priori, rational explanation and mathematization of nature, offers an alternative to the rise of empiricism reliant on Baconian, experimental natural history, and marks the emergence of the prose of the *petit fait vrai* and the death of Pan, that is, the disenchantment of Nature. Yet not only did the French natural history of the *Âge classique* record in very peculiar ways the experimental model from the other side of the Channel; it also preserved and even rejuvenated ‘enchanted’ modes of experiencing nature, as the chapters in this volume show.

Finally, the Enlightenment marks the golden age of natural history instantiated in the collective and systematic enterprise of the Académie des sciences – Buffon’s colossal *Histoire Naturelle* and the reports of naturalists sent on specific exploratory missions – but also in the more informal development of local and even urban or suburban forms of natural-historical description. In both cases, the poetics of the natural-historical description reveal a vast array of rhetorical motivations which coexisted alongside, or reached beyond, epistemic concerns with observation.

Indeed three main rhetorical or literary features are present in French natural-historical description across the early modern period.

The first one is the permanence, and even the resistance of wonders to the rise of observation as an epistemic genre. Fruet shows in “L’Idée d’un oiseau” that the Renaissance travellers themselves did not easily give up on the notion that the bird of paradise was legless, *in spite of* their own autoptic experience: such was the evocative poetic power but also financial pull of this representation, despite its repeated observational falsifications. Marrache-Gourault highlights the importance of commercial interests in the lasting belief that the narval tooth was a unicorn horn: merchants and natural historians were defending antagonist interests in this case. Along those same lines, Jalobeanu

43 See for example, Belon du Mans Pierre, *Les Observations de plusieurs singularitez et choses memorables, trouvées en Grece, Asie, Judée, Egypte, Arabie et autres pays estranges* (Paris, Guillaume Cavellat: 1553); Belon du Mans Pierre, *L’Histoire de la nature des oyseaux*, ed. and intr. P. Glardon (Geneva: 1997).

highlights the importance of the poetics of wonder in the natural-historical description of the seventeenth century by focusing on Pierre Amboise's translation of Bacon's *Sylva sylvarum*, the *Atlas nouveau* (Paris: 1631): the text is a collection of wondrous facts claimed to have been personally observed, from which the very experimental processes so central to the Baconian project have been carefully expurgated.

While Anstey's study of Buffon controversially suggests that the Baconian programme finally made it to Paris in the full, Stéphane Schmitt's investigation of the permanence of classical learning in Buffon's *Histoire naturelle* reminds the reader that compilation remained a constant of the natural-historical description throughout the early modern period. It pervades even the supposedly autoptic travel narratives of the Renaissance studied by Fruet; it is the sole matrix of Faultrier's elegant manuscript in the Fouquet collection anatomized by Charmantier, which testifies to the endurance of a collector's taste for such natural-historical compilations well into the seventeenth century.

The final, enduring poetic feature of the early modern natural-historical description envisaged in this volume is the moralisation of nature and the elaborate rhetorical frameworks it summons. In the sources studied here, this moralisation is either cast in emblematic form, or as personal, affective experience. Thus, Paul Smith notes the emblematic uses of Belon's illustrations in a separate volume published by Guillaume Cavellat in 1557, while Garrod points at the Jesuit moral didacticism reliant on the emblemization of New World animals in the 1618 *Polyhistor symbolicus* of Nicolas Caussin: this lively tradition of Jesuit emblematics follows closely the findings of natural history. As for affective experience, it suffuses and rejuvenates commonplace rhetorical frameworks of the natural-historical description throughout the period, be they theological or ethical ones. Broomhall thus describes the ways in which the ceramist Bernard Palissy frames his hands-on confrontation with natural particulars as a very personal and Protestant spiritual exercise, thus transforming the natural-theological *topos* which opens many early modern natural histories into recorded, personal experience. This personal experience becomes a geographical one in Van Damme's account, in which he unearths the deambulatory structure that frames the urban and suburban natural histories of Paris – natural history as local guide becomes the record of a studious promenade calling on the reader to repeat it – *Rousseau avant la lettre*. Finally, at the end of our chronology, Gibbard focuses on the affective dimension of nomenclature in Leschenault's botanical diary of the exploration of the Western Australian coast: if the names of plants were the safe repositories of their discoverer's glory for Mattioli, they crystallize, in the age of sensibility,

the nostalgia and homesickness of Leschenault reminiscing about friends and family on the other side of the world.

Such a rhetorical or literary perspective on early modern French natural-historical description may not provide the same satisfactory narrative as its epistemic counterpart concerned with the emergence of observation. We thirst for – often rationalist – teleologies of modernity, and this is not one. Yet it has the merit of making sense of those poetic features of natural history that the epistemic narrative often confines to the status of striking remnants of a pre-scientific age. These features testify to the metamorphoses of the early modern culture of *copia* and of its enduring concern for the aesthetic pleasure of the reader. They compel us – us, moderns, so unfamiliar with, and dismissive of, rhetorical overload – to set foot and explore, through a sympathetic leap of the historian's imagination, other mental habitus. Their history might then become not the history of the emergence of modern science, but of modern taste.

Bibliography

- Ashworth W.B. Jr, "Emblematic Natural History of the Renaissance", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 17-37.
- Bacon Francis, *L'Atlas nouveau*, trans. Pierre Amboise (Paris, Antoine de Sommaville and André Soubbron: 1631) [heavily modified translation of Francis Bacon's *Sylva sylvarum*].
- Beagon M., "The Curious Eye of the Elder Pliny", in Gibson R. – Morello R. (eds.), *Pliny the Elder: Themes and Contexts* (Leiden – Boston: 2011) 71-88.
- Belon du Mans Pierre, *Les Observations de plusieurs singularitez et choses memorables, trouvées en Grece, Asie, Judée, Egypte, Arabie et autres pays estranges* (Paris, Guillaume Cavellat: 1554)
- Belon du Mans Pierre, *L'Histoire naturelle des estranges poissons marins, avec la vraie peinture et description du Daulphin, & de plusieurs autres de son espece, observée par Pierre Belon du Mans* (Paris, Guillaume Cavellat and Gilles Corrozet: 1551).
- Bender J. – Marrinan M. (eds.), *Regimes of Description: In the Archives of the Eighteenth Century* (Stanford: 2005).
- Binet Estienne, *Essay des merveilles de nature et des plus nobles artifices, piece tres necessaire a tous ceux qui font profession d'eloquence* (Rouen, Jean Osmont: 1621).
- Blair A., "Conrad Gessner's Paratexts", *Gesnerus* 73, 1 (2016) 73-123.
- Blair A., *Too Much to Know: Managing Scholarly Information before the Modern Age* (Yale: 2010).

- Blake McHam S., *Pliny and the Artistic Culture of the Italian Renaissance* (New Haven, Conn.: 2013).
- Buffon Georges-Louis Leclerc, Comte de, "Premier Discours: De la manière d'étudier et de traiter l'Histoire naturelle", in *Histoire naturelle, générale et particulière, avec la description du cabinet du Roy*, 36 vols (Paris, L'Imprimerie royale: 1749-1789), vol.1 (1749).
- Daston L., "Description by Omission: Nature Enlightened and Obscured", in Bender J. – Marrinan M. (eds.), *Regimes of Description: In the Archives of the Eighteenth Century* (Stanford: 2005) 12-24.
- Daston L. – Lünbeck E. (eds.), *Histories of Scientific Observation* (Chicago: 2010).
- Daston L., "Epistemic Images" in Payne A. (ed.), *Vision and Its Instruments: Art, Science and Technology in Early Modern Europe* (Pennsylvania: 2015) 1-13.
- Daston L. – Park K., *Wonders and the Order of Nature (1150-1750)* (New York: 2001).
- Du Pinet, Antoine (trans.), *Le Monde de Plin Second* (Lyons, Claude Senneton: 1562).
- Egmond, F., *The World of Carolus Clusius: Natural History in the Making (1550-1610)* (London: 2014).
- Findlen P., *Possessing Nature: Museums, Collecting, and the Making of Science in Early Modern Italy* (Berkeley: 1994).
- Freedberg D., *The Eye of the Lynx: Galileo, His Friends, and the Beginnings of Modern Natural History* (Chicago: 2003).
- Gibson R. – Morello R. (eds.), *Pliny the Elder: Themes and Contexts* (Leiden – Boston: 2011).
- Glardon P. (ed.), *L'Histoire naturelle au XVI^e siècle: introduction, étude et édition critique de La Nature et diversité des poissons (1555) de Pierre Belon* (Geneva: 2011).
- Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996).
- Kusukawa S., *Picturing the Book of Nature: Image, Text and Argument in Sixteenth-Century Human Anatomy and Medical Botany* (Chicago: 2012).
- Lemaire de Belges Jean, *Les Illustrations de Gaule et singularitez de Troie*, 2 vols. (Paris, Geoffroy de Marnef: 1512-1513).
- Maclean I., "White Crows, Graying Hair, and Eyelashes: Problems for Natural Historians in the Reception of Aristotelian Logic and Biology from Pomponazzi to Bacon", in Pomata G. and Siraisi N. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge Mass: 2005) 147-180.
- Marcaida Lopez, J.R., *Arte y Ciencia en el Barroco Español* (Madrid: 2014).
- Mattioli Pietro Andrea, *Commentarii in libros sex pedacii Dioscoridis Anazarbei, de medica materia* (Venice, Vincentius Valgrisius: 1554).
- Ogilvie B., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2004).

- Ogilvie B., "Natural History, Ethics, and Physico-Theology" in Pomata G. – Siraisi N. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge Mass.: 2005) 75-104.
- Paradis S., "Les Descriptions animales dans l'*Histoire Naturelle* de Buffon: entre le vraisemblable de l'écrivain et le vrai du savant", *@nalyse* 9, 1 (2014).
- Payne A. (ed.), *Vision and Its Instruments: Art, Science and Technology in Early Modern Europe* (Pennsylvania: 2015) 1-13.
- Pinon L., *Les Livres de zoologie à la Renaissance: objets de mémoire et instruments d'observations*, Doctoral dissertation, Centre d'études supérieures de la Renaissance (Tours: 2000).
- Pliny the Elder, *Natural History*, ed. and trans. W.H. Jones, H. Rackham and others, 10 vols. (London: 1938-1963).
- Pomata G. – Siraisi N. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge Mass.: 2005).
- Pomata G., "Observation Rising: Birth of an Epistemic Genre, 1500-1650", in Daston L. – Lünbeck E. (eds.), *Histories of Scientific Observation* (Chicago: 2010) 45-80.
- Roche D., "Natural Histories in the Academies", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 127-144.
- Rondelet Guillaume, *Liber de piscibus marinis* (Lyons, Matthieu Bonhomme: 1554).
- Spary E.C., "Scientific Symmetries", *History of Science* 42 (2004) 1-46.
- Spary E.C., *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: 2000).
- Stalnaker J., *The Unfinished Enlightenment: Description in the Age of the Encyclopaedia* (Cornell: 2010).
- Sundberg Wall C., *The Prose of Things: Transformations of Description in the Eighteenth Century* (Chicago: 2014).
- Thevet, André, *Les Singularitez de la France Antarctique, autrement nommez Amerique* (Paris, chez les heritiers de Maurice de La Porte: 1558).
- Tomlinson R., "Plusieurs choses qu'il n'avoient veuës: Antoine du Pinet's Translation of Pliny the Elder", *Translation and Literature* 21, 2 (2012) 145-161.
- Tomlinson R., *Inventive Inventories: Lists, Literature, and Natural History in Renaissance France* (Oxford: forthcoming).
- Whitaker K., "The Culture of Curiosity", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 75-90.

Deux recueils d'illustrations ornithologiques : les *Icones avium* (1555 et 1560) de Conrad Gessner et les *Portraits d'oyseaux* (1557) de Pierre Belon

Paul J. Smith

Le milieu du XVI^e siècle est caractérisé par une production fiévreuse de nouvelles œuvres majeures sur la nature vivante, tout d'abord en botanique (à commencer par le travail pionnier d'Otto Brunfels)¹, puis en zoologie (William Turner, Pierre Belon, Guillaume Rondelet et Conrad Gessner). Leur travail est profondément enraciné dans les traditions classiques d'Aristote et de Pline l'Ancien, publiés dans les éditions savantes, mais aussi dans les traductions². Turner, par exemple, mentionne explicitement sa dette aux Anciens en présentant son ouvrage sur les oiseaux comme un commentaire lexical sur Aristote et Pline : *Avium praecipuarum, quarum apud Plinium et Aristotelium mentio est, brevis et succinta historia*³. De même, Belon, Rondelet et Gessner prennent souvent l'étymologie grecque comme point de départ de leurs descriptions.

Cependant, dans ces années, un certain nombre de changements importants a lieu. Des espèces inconnues, venant de l'Europe et au-delà, sont découvertes et décrites. Le livre imprimé, mais aussi les réseaux de correspondance entre les experts naturalistes – tant professionnels (pour la plupart médecins) qu'amateurs curieux (souvent collectionneurs aisés) – contribuent à la diffusion des savoirs de la nature vivante en Europe. Gessner est au cœur de ces réseaux par ses correspondances avec Turner, Rondelet, Belon et beaucoup d'autres⁴ – correspondance non seulement écrite, mais aussi matérielle

1 Brunfels Otto, *Herbarum vivae eicones*, 3 vols. (Strasbourg, Joannes Schottus : 1530-1536).

2 *L'Historia animalium*, le *De partibus animalium* et le *De generatione animalium* d'Aristote traduits par Théodore Gaza sont disponibles en version imprimée depuis 1476. *L'Historia naturalis* de Pline parut en 1469. Une traduction en français (par Antoine du Pinet) a paru en 1562 et une en allemand (par Johann Heyden) en 1565.

3 Turner William, *Avium praecipuarum, quarum apud Plinium et Aristotelium mentio est, brevis et succinta historia* (Cologne, Johann Gymnich : 1544).

4 Urs Leu compte 472 correspondants, dont 117 médecins. Leu U.B., "Conrad Gessners Netzwerk", in Leu U.B. – Ruoss M. (eds.), *Facetten eines Universums. Conrad Gessner 1516-2016* (Zürich : 2016) 61-74.

(dessins et objets circulent) et interpersonnelle (on se rend visite : Gessner a connu personnellement Turner, Rondelet et Belon). Ces réseaux seront perpétués par les générations suivantes : Jacques Daléchamps, Carolus Clusius, Ulisse Aldrovandi, Joachim Camerarius le Jeune, et d'autres encore⁵, malgré les conflits politiques et religieux qui déchirent l'Europe. Les naturalistes expérimentent avec les classifications du monde vivant proposées par Aristote et Pline en les adaptant aux connaissances sans cesse accrues du vivant⁶. Les descriptions deviennent plus détaillées ; elles sont accompagnées plus fréquemment et plus systématiquement par des illustrations qui se disent *ad vivum*⁷. Dans son anthologie de textes zoologiques Laurent Pinon caractérise l'histoire naturelle de cette période comme 'l'enregistrement de la Nature par l'image'⁸.

Par ses nombreuses illustrations (parmi lesquelles les deux célèbres illustrations comparant le squelette d'un oiseau à celui d'un homme), ses tentatives de classification et ses descriptions à la fois précises (pour l'époque) et vivantes, l'*Histoire de la nature des oyseaux* (1555) de Pierre Belon présente un exemple parfait de la production zoologique de l'époque⁹. Dès sa parution, le livre acquiert une réputation fondée en grande partie sur les premiers livres que Belon a fait publier, à savoir ses *Observations de plusieurs singularitez et choses memorables* (1553), le récit de son voyage en Moyen Orient, et ses livres en français et en latin sur la nature des poissons (1551, 1553, 1555). En 1557, Guillaume Cavellat, l'imprimeur/éditeur parisien de l'*Histoire de la nature des oyseaux*, a l'idée de publier à part les illustrations de ce livre et celles des *Observations* sous le titre de *Portraits d'oyseaux, animaux, serpens, herbes, arbres, hommes et*

5 See Egmond F., *The Worlds of Carolus Clusius : Natural History in the Making* (Londres : 2010).

6 Pour une étude de cas du toucan et du calao, oiseaux inconnus à l'époque, et un compte-rendu des hésitations classificatoires que ces oiseaux suscitent, voir Smith P.J., "On Toucans and Hornbills : Readings in Early Modern Ornithology from Belon to Buffon", in Enenkel K.A.E. – Smith P.J. (éds.), *Early Modern Zoology. The Construction of Animals in Science, Literature and the Visual Arts* (Leyde – Boston : 2007) 75-119.

7 Pour la polyvalence sémantique de cette notion, voir Kusukawa S., *Picturing the Book of Nature : Image, Text, and Argument in Sixteenth-Century Human Anatomy and Medical Botany* (Chicago : 2012) et Swan C., "Ad vivum, naer het leven, from the life : defining a mode of representation", *Word and Image* 11, 2 (1995) 353-372.

8 Pinon L., *Livres de zoologie de la Renaissance : une anthologie* (Paris : 1995) 15.

9 Pour une appréciation nuancée de Belon ornithologue, voir P. Glardon dans l'introduction de notre édition de référence : Belon du Mans Pierre, *L'Histoire de la nature des Oyseaux. Fac-similé de l'édition de 1555*, éd. P. Glardon (Genève : 1997) (édition originale : Paris, Guillaume Cavellat : 1555).

femmes, d'Arabie et Egypte [...] Le tout enrichy de Quatrains (1557)¹⁰. Ce faisant, il suit l'exemple de l'imprimeur zurichois Christophe Froschauer, qui avait fait la même chose avec les illustrations de l'*Historiae animalium liber III, qui est de avium natura* (1555) de Conrad Gessner, republiées dans la même année 1555 et de nouveau en 1560 sous le titre d'*Icones avium omnium*¹¹. Si Froschauer se contente d'accompagner les illustrations de brefs commentaires en prose (écrits par Gessner lui-même), Cavellat va plus loin : dans sa "Dédicace au Roi", l'éditeur explique que pendant l'absence temporaire de Belon (en expédition botanique 'par les plaines et montagnes d'estrange païs' sur les ordres du Roi), il a 'escript aucuns quatrains Francois pour donner quelque petite declaration au portrait de chacune figure, renvoyant ceux qui en voudront scavoir d'avantage aux autres livres, là ou ils sont plainement descrits'. Les quatrains ajoutés fonctionnent comme une *subscriptio* emblématique – emblématisation du matériau ornithologique qui est inspirée par les blasons d'oiseaux de Guillaume Guérault (1550), comme nous allons le voir plus en détail dans la seconde partie de la présente contribution, où nous nous proposons d'étudier en profondeur la 'poétique' sous-jacente des *Portaits*. La première partie de notre contribution portera sur les raisons qui ont amené Froschauer et Cavellat à rééditer les illustrations de Gessner et de Belon, et les rapports existant entre les deux entreprises éditoriales d'illustrations ornithologiques.

1 Rapports intertextuels et inter picturaux entre Gessner et Belon

La raison la plus évidente pour rééditer les illustrations réside dans le profit économique que Froschauer et Cavellat désirent en tirer. En effet, en étudiant les pages de titre des *Icones*, on constate que Froschauer cherche à élargir son public : il fait la publicité des illustrations en trois langues (italien, français et allemand) à un public international de lecteurs¹². Les lecteurs visés ne sont plus seulement les lecteurs savants de l'*Historia animalium* : la version abrégée en allemand, que Froschauer publie sous le titre de *Vogelbuoch* (1557), précise

10 Belon du Mans Pierre., *Portraits d'oyseaux, animaux, serpens, herbes, arbres, hommes et femmes d'Arabie et d'Égypte : le tout enrichy de quatrains, pour plus facile cognoissance des oyseaux et autres portraits* (Paris, Guillaume Cavellat : 1557) sans pagination (plusieurs rééditions).

11 Gessner Conrad, l'*Historiae animalium liber III, qui est de avium natura* (Zurich, Christoph Froschauer : 1555) ; Idem, *Icones avium omnium, quae in Historia avium Conradi Gesneri describuntur* (Zurich, Christoph Froschauer : 1555 ; deuxième édition 1560).

12 'I Ritratti e le figure de gli ucelli. Les Figures et pourtraictz des oiseaux. Die figuren und contrafacturen der vögel.' (Gessner, *Icones* (1555). Page de titre).

sur sa page de titre qu'elle s'adresse à un vaste lectorat : 'allen Liebhaberen der künsten, Arzeten, Maleren, Goldschmidten, Bildschnitzern, Seydenstickern, Weydleüten und Köchen'¹³ (pour tous les amateurs des arts, médecins, peintres, orfèvres, graveurs, tisserands de soie, fermiers et cuisiniers). Cette stratégie commerciale porte ses fruits : nombreux sont les artistes, surtout flamands, qui prennent les illustrations de Gessner comme modèle : ainsi Marcus Gheeraerts l'Ancien dans les recueils de fables qu'il a illustrés¹⁴, Simon de Myle dans sa toile *L'Arche de Noé sur le mont Ararat* (1570)¹⁵, Adriaen Collaert dans les séries d'estampes de sa main, et Joris Hoefnagel dans la série de dessins coloriés consacrée à l'élément *Aer*¹⁶. Et le Metropolitan Museum of Art à New York possède un dessin, attribué à Jan Brueghel l'Ancien ou à Albert Flamen, où sont dessinés un grand nombre d'oiseaux pris dans le *Vogelbuoch*¹⁷.

Outre ces raisons commerciales, Gessner, Belon et leurs imprimeurs rééditent les illustrations dans un autre but : ils profitent de l'occasion pour corriger et mettre à jour leurs *Histoires naturelles*. Gessner utilise certaines publications de Belon à cette fin, et vice versa. Nous avons mis en tableaux les interdépendances entre les deux auteurs dans le diagramme suivant [Table 2.1].

Regardons de plus près ces interdépendances, en constatant que, déjà avant 1555, les deux auteurs sont au courant de leurs ouvrages publiés et de leurs projets. Ainsi, Belon, dans son *Histoire des oyseaux*, loue Gessner : 'Monsieur Conradus Gesner Almant, medecin de Surie en Suisse, homme docte en trois langues, et de diligence extreme pour le profit de la posterité, et vigilant pour le bien public, et auquel les hommes doyvent autant de louange pour ses excellentes œuvres, qu'à nul autre qui ait mis la main à la plume'¹⁸. De même Gessner, dans, par exemple, le chapitre de l'*Historia avium* consacré au

13 Cf. Gessner Conrad., *Vogelbuoch, darin die art, natur und eigenschafft aller Vöglen*, trad. Rudolph Heusslein (Zurich, Christoffel Froschauer : 1563).

14 Gheeraerts copie le caméléon de Gessner. Voir Smith P.J., "Inconstant et variable. Le caméléon entre histoire naturelle et emblématique", *Textimage Varia* 4 (Printemps 2014), https://www.revue-textimage.com/09_varia_4/smith4.html.

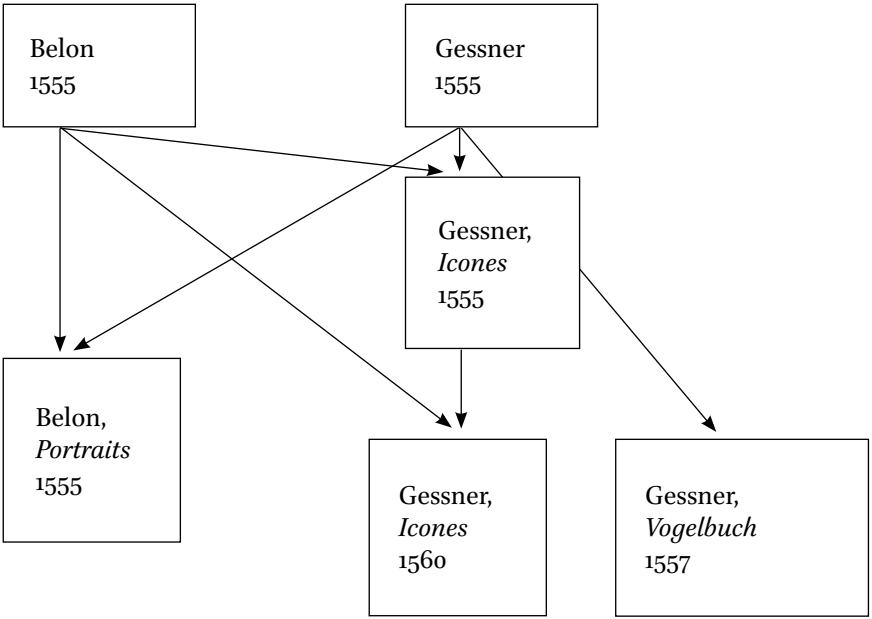
15 Voir la thèse de Rikken M., *Dieren verbeeld. Diervoorstellingen in tekeningen, prenten en schilderijen door kunstenaars uit de Zuidelijke Nederlanden tussen 1550 en 1630* (Leyde : 2016) 157.

16 Voir Rikken M., "Abraham Ortelius as Intermediary for the Antwerp Animal Trailblazers", *Jahrbuch für Europäische Wissenskulturr / Yearbook for European Culture of Science* 6 (2011) 95-128.

17 Rikken M. – Smith P.J., "Jan Brueghel's *Allegory of Air* (1621) from a Natural-Historical Perspective", *Netherlandish Yearbook for History of Art* 61 (2011) 86-115, specifically 92, 108. L'ordre des oiseaux dessinés ainsi que les dénominations allemandes prouvent que l'artiste a utilisé le *Vogelbuoch* et non pas les *Icones* ou l'*Historia avium*.

18 Belon, *L'Histoire des oyseaux* 339.

TABLE 2.1 Interdépendances textuelles et picturales entre Belon et Gessner



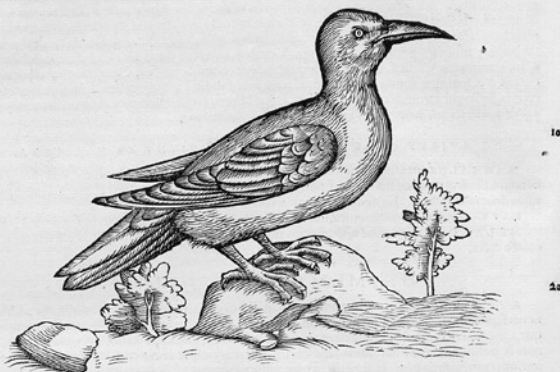
- Belon, *Histoire de la nature des oyseaux* [...] (Paris: 1555).
- Gessner, *Historiae animalium, liber III* [...] *de avium natura* (Zürich: 1555).
- Gessner, *Icones* (Zürich: 1555).
- Gessner, *Vogelbuch* (Zürich: 1557).
- Belon, *Portraits* (Paris: 1557).
- Gessner, *Icones* (Zürich: 1560).

Guêpier d'Europe (*Merops apiaster*), cite à plusieurs reprises les *Observations* de Belon, et il lui emprunte l'illustration de l'oiseau [Fig. 2.1]¹⁹. Dans le cas des *Icones* de Gessner, le travail de mise à jour est visible en deux endroits : en 1555 les *Icones* corrigent l'*Historia avium*, qui, à ce moment même, est encore sous presse. En 1560 de nouveau, la seconde édition des *Icones* corrige la première édition de 1555. Comme Philippe Glardon l'a formulé récemment, les *Icones* ne sont pas d'afterthoughts, pretexts to bring to profit costly plates, but rather [...] an integral part of the entire work, exceeding by far the limits of the edited volumes' (de simples prétextes, après coup, destinés à tirer profit de plaques d'impression coûteuses, mais plutôt [...] partie intégrante de l'œuvre dans son ensemble, débordant le cadre des volumes édités)²⁰. On notera que Gessner

19 Gessner, *Historia avium* 576.
20 Glardon P., "Gessner Studies : State of the Research and New Perspectives on 16th-Century Studies in Natural History", *Gesnerus* 73, 1 (2016) 23.

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De Auibus



meropis etymologiam adferemus. Alkemus uel akeuius auis apud Rasim de l. x. animalibus, cap. x l. v l. i. non alia mihi quam merops uideatur. scribit enim tam apibus uelci, &c. Marochos pro merope apud Alberti legitur. ¶ In Creta uulgo melisophago dicitur a comedecis apibus, Bellonius. A nonnullis Græcis hodie *palanoph*. Meropes aues quæ & flori (*galan*) dicitur. Varinus: nimirum a floridis coloribus, sed alia auis est anthus, quam Gaza Latine flori reddidit. Philo-
rus, *anthos*, per o. breue auis est, per o. longum uero, *anthos*, proprii uiri nomen, Suidas. Anthum auem a Græcis hodie uulgo florum diei Bellonius testatur. ¶ Meropes dicuntur aues, quas in Italia uocant barbaros, Probus in Georgica, ego dardos uel dardaros legerim, darda enim Græcis hodie apiculam sonat: & dardo circa Bononiam alibi meropem auem, quæ apes muscasque uti-
rundines ripariæ (quæ uulgo similiter Italis dardani, dardanini & tartari dicuntur) uolando deuo-
rant. Meropes aliter gauli uulgo Italico dicuntur, ut aiunt: & ieuoli, Ant. Mancinellus. Vulgo apud nos grallum appellant, Niphus, sed idem alibi galgulum quoque grallum interpretatur. Me-
ropem Neapoli audio lupo de l'api uocitari in Sicilia picciaferro, a terrea rostris duritie. ¶ Hispanice aueiurico. ¶ Gallice dici posset guêpier, Bellonius. ¶ Germanicum nomen fingere li-
cebit, cum *Imberwolf*, uel *Imberfraz*.

¶ Dardania Latine meroli (merops) uocatur, & est picus uiridis, Albert. Et alibi, Merops (inquit) est de genere picorum. Sed longe alia auis est picus uiridis, ut historiam utriusque & icones conferenti facile erit animaduerrere. ¶ Galli & Germani quidam putauerunt meropem esse autem quæ Gallice mefange appellatur, (ea parus est Latinorum, quod falsum est, Bellonius, Ebe-
rus & leucurus auem Germanice dictam *Krimz* uel *Wimbals*, meropem faciunt, quum ea om-
nino iynx sit,

¶ Auis est merops tam uulgaris in Creta, ut nusquam non in illa uolare appareat: rara alibi, & ip-
sis etiam Græcis per continentem incognita, uix unquam uisa Italia, Bellonius. Nos in quibuldam
Italici locis satis frequentem esse accepimus. Colore est longe pulcherrimo, quo uel cum egregio
pittaco certat, paulo maior sturno, Bellonius. Etrursus, Magnitudine sturni est, similis sere ipsius
uulgo dictæ aui, (ipse ipsidâ alcyonem interpretatur.) Mulicapa auis est maior turturæ & colum-
ba, colore pennarum sicut lanarius, pedes & rostrum habet sicut hirundo, Albertus. hæc forte me-
ropi non conueniunt. Meropes aues sunt uirides, Seruius. Errat Seruius qui meropem inquit
uiridem esse & uiridiores pennas habere, Perottus. Pennæ huius auis inferiores pallidæ sunt, su-
periores cæruleæ, ut alcyonis: postremæ pinnule rubræ habentur, Aristot. interprete Gaza, Græcè
legitur, *πρὸς τὴν ἀκμὴν τῆς πτέρυγος ῥοδία*: id est, in summis alis rubræ. Plinius ex Aristotele sic,
Merops est pallido intus (in uentre, lildorus: quod magis placeat colore pennarum, superne cyaneo,
priori lildorus legit peccore, sed malo priori, cum Græcè sit, *πρὸς τὴν ἀκμὴν*) lubentio. ¶ Meropes ru-
bentibus sunt cruribus & ore prelongo, Textor. Græci hodie suum melisophagum rostro ob-
longo esse dicunt: Siculi durissimo, unde & picciaferro nominant. Rictum ens tantum habet
mulicapa, ut muscas multas in eo eius gratia humoris insidentes capiat, Albertus. Oris rictum
habet

FIGURE 2.1 Guêpier. Gessner Conrad, *Historiae animalium liber III., qui est de auium natura* (Zürich, Christoph Froschauer: 1555) 576

FROM: [HTTP://WWW.E-RARA.CH/ZUZ/CONTENT/PAGEVIEW/2120628](http://www.e-rara.ch/zuz/content/pageview/2120628)

tire amplement partie de l'*Histoire des oyseaux* de Belon pour ses mises à jour. De même, dans le cas de Belon, une comparaison précise entre les *Portraits* et l'*Histoire des oyseaux* nous apprend que Belon, ou plutôt Cavellat, a largement profité des ouvrages de Gessner. Ce sont ces rapports intertextuels et interpic-turaux que nous aimerions étudier en détail dans les deux sections suivantes²¹.

2 Gessner lecteur de Belon

A cette fin, regardons de plus près la page 42 des *Icones* de 1555, qui comprend les illustrations de trois espèces ornithologiques : le bouvreuil pivoine (*Pyrrhula pyrrhula*), le roitelet huppé (*Regulus regulus*) et le troglodyte (*Troglodytes troglodytes*) [Fig. 2.2]. Le commentaire philologique sur ces oiseaux est assez succinct : dans le commentaire sur le bouvreuil, le nom de Belon est brièvement mentionné. En revanche, dans l'édition de 1560, à la page correspondante (page 49) [Fig. 2.3], on note que le commentaire philologique a pris de l'ampleur, et que Belon y est abondamment cité comme autorité au sujet du roitelet et du troglodyte. Il n'est pas improbable que l'omniprésence de Belon dans l'édition de 1560 soit due en partie à la visite que Belon a rendue à son collègue Gessner à Zürich en avril 1557.

L'exemplaire personnel de Gessner des *Icones* de 1560, qui se trouve actuellement à la bibliothèque centrale de Zürich, nous apprend qu'après 1560, Gessner continue de réviser son texte, l'*Histoire des oyseaux* de Belon à la main, peut-être en vue d'une troisième édition des *Icones* qui ne verra jamais le jour. Nombreuses sont en effet les corrections en, marge qui font explicitement référence à Belon : page 75 (où le nom de Rondelet est biffé et remplacé par celui de Belon) ; page 75 (longues références à Belon au sujet de la sarcelle d'été (*Anas querquedula*)) ; page 117 (longue référence au 'Bihoreau' de Belon) ; et la page 137 ('Belon, livre 4, chapitre 11'). La page 98 montre bien l'attention avec laquelle Gessner a lu Belon : il a souligné la phrase correspondant à celle de l'*Histoire des oyseaux* : '[le guépier] a les pieds à la façon d'un Papegay : sçavoir est, deux doigts devant, et deux derriere', tout en indiquant par un trait que cette phrase ne correspond pas à l'illustration de Belon, qui montre en effet un guépier ayant trois doigts devant et un seul derrière [Fig. 2.4]²².

21 Pour les rapports entre les deux hommes dans le domaine de l'ichtyologie, nous nous référons à Glardon P., *L'histoire naturelle au XVI^e siècle. Introduction, étude et édition critique de La nature et diversité des poissons de Pierre Belon (1555)* (Genève : 2011).

22 Voir aussi Glardon, "Gessner Studies", qui donne le même exemple du guépier.

Ordo quartus.

49

F. Rubrica. Pectore inter aues hæc una maxime omnium rubet.

ITALICE Suffuleno, Franguello montano, (quamvis & aliæ quædã fringillæ montanæ uocantur,) & alicubi circa Alpes Francuel inuermengle, id est fringilla hyberna.

GALLICE Piuoine, ni fallor. nam Belfonius ficedulæ uel atris capillæ idem nomen attribuit. Lotharingis Pion.

GERMAN. Gûgger/Blârfînck/Goldfînck/Gâtfinck/Bronssesser/Bollenbyffer/Kotwogel/Hail/Goll/Gympel/Gumpel/Thumher/Thumpfass/Pfâfflin/Quecker/(Das wyble/Quetsch/)Pilart.



LATINE Regulus, Trochilus, Rex, Senator, Basiliscus.

ITALICE Reillo, Regillo, Scricciola, Rectino, Reatin, Fiorancio.

GALLICE Rotolet, Roytolat, Petit roy, Soucie, Sourcile, Poul.

GERMAN. Goldhendlin/Strûfle/Ochsenegle. Sed pleræq hæc nomina in diuersis linguis à re denominata, passerem troglodyten potius significant, quem cum regulo multi confundunt.



LATINE Passer troglodytes.

ITALICE Reillo, &c. uide superius in Regulo. Perchia chagia (ni fallor) Siculis.

GALLICE Beurichon, Farfonte, Conta fazona, Rebete, Roy, Rezeto, Redoyell, uide supra in Regulo.

GERMAN. Zunschliffle/Thunstûnck/Schnytûnck/Zuntûnck/Hesseltûnck/Wunstetûnck/Neustûnck/Dumeling.



LE

FIGURE 2.2 Oiseaux. Gessner Conrad, *Icones* [...] (Zürich, Christoph Froschauer: 1555) 49. Zentralbibliothek Zürich

FROM: [HTTP://WWW.E-RARA.CH/ZUZ/CONTENT/PAGEVIEW/1457476](http://www.e-rara.ch/zuz/content/pageview/1457476)

Ordo quartus.

49

F. Rubrica. Pectore inter aues
hac una maxime omnium rubet.
Bellonio hac est Sycalis seu Fi-
cedula, & alio nomine Melan-
coryphus, id est, Atricapilla.

ITAL. Suffuleno, Franguello
montano, (quavis & aliae quae-
dam fringillae montanae uocan-
tur,) & alicubi circa Alpes Fran-
guel inuernengle, id est fringilla
hyberna.

GALL. Piuoine, Sifleur, &
Groulard, sed postremum hoc potius debetur alteri auiculae, quam Batidem Aristo-
telis Bellonius putat. Lotharingis Pion.

GERMAN. Gügger / Blüßfinck / Goldfinck / Gütfinck / Bronseffer / Bollens-
byffer / Rotvogel / Hail / Goll / Gynpel / Gumpel / Thumber / Thumpfass / Pfä-
ßlin / Quecker / Das wyble / Quers / Pilart.

LATINE Regulus, Trochilus, Rex, Se-
nator, Basiliscus, Bellonius Troglodyten
nostrum, cuius icon statim sequitur, pro
Trochilo & Rege auium pingit: & Roy-
telet quoque nominat Gallicè, hunc uero
nostrum Regulū, facit Aristotelis Tyran-
num: quem Aristoteles paulo maiore cica-
da esse scribit, crista punicea. noster hic non
cristam, sed maculā auream, nō puniceam,
in uertice gerit.

ITALICE Reillo, Regillo, Scricciola,
Rechino, Reatin, Fior rancio.

GALLICE Rottollet, Roytolat, Petit roy, id est Regulus, ab alijs Poul, quod pro-
pter paruitatē semper pullus appareat. alijs Sourcie, uel melius Soucie, quod plu-
mas nigras supra oculos ceu supercilia gerat.

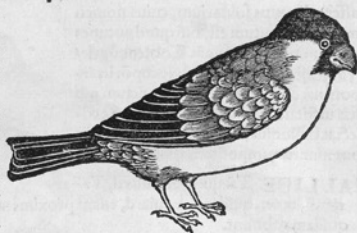
GERMAN. Goldbendlin / Strüßle / Ochsenengle. Sed pleraque haec nomina
in diuersis linguis à rege denominata, passerē troglodyten potius significant, quem
cum regulo multi confundunt.

LAT. Passer troglodytes. Bellonius quidē
logē aliū Troglodyten facit, auiculā Phoeni-
curo ualde simile, multo minore, corpore obs-
longo: Gallicè dictam Fouette rousse, ab eo
quod foueas intret, & ruffo colore sit. Sed no-
strum Troglodyten uerū esse ex Aëti descriptione perspicuum est.

ITALICE Reillo, &c. uide superius in Re-
gulo. Perchia chagia (ni fallor) Siculis.

GALL. Beurichon, Farfonte, Contafas-
na, Rebete, Roy, Rezeto, Redoyell. uide su-
pra in Regulo. Bellonio Roytelet, Bœuf de
Dieu, & Berichor.

GERMAN. Zunft / Hüpfle / Thurntönck / Schnytünig / Zuntünig / Nesselk-
nig / Wintertünig / Neupfönig / Dümeling.



E

FIGURE 2.3 Oiseaux. Gessner Conrad, *Icones* [...] (Zürich, Christoph Froschauer: 1560) 49.
Zentralbibliothek Zürich. Exemplaire personnel de Gessner
FROM: [HTTP://WWW.E-RARA.CH/ZUZ/CONTENT/PAGEVIEW/528248](http://www.e-rara.ch/zuz/content/pageview/528248)



FIGURE 2.4 Guêpier. Gessner Conrad, *Icones [...]* (Zürich, Christoph Froschauer: 1560) 98. Zentralbibliothek Zürich. Exemplaire personnel de Gessner
FROM: [HTTP://WWW.E-RARA.CH/ZUZ/CONTENT/PAGEVIEW/528297](http://www.e-rara.ch/zuz/content/pageview/528297)

Ce n'est pas seulement au niveau de la description des oiseaux individuels que l'influence de Belon se fait sentir. On sait que l'*Historia animalium* de Gessner est ordonnée alphabétiquement, pour des raisons très pratiques : l'ordre alphabétique permet au lecteur de trouver rapidement son chemin dans les volumes énormes de son ouvrage encyclopédique. Par contre, les *Icones* sont ordonnés selon une classification en huit catégories, qui semblent être inspirées par la classification en six 'ordres' que propose Belon dans son *Histoire des oyseaux*²³, comme le montre le schéma suivant [Table 2.2]²⁴ :

TABLE 2.2 Les classifications des oiseaux proposées par Belon et Gessner

Belon, <i>Histoire</i> (1555) et <i>Portraits</i> (1557)	Gessner, <i>Icones</i>
1. rapaces tant de jour que de nuit	1. rapaces diurnes
2. oiseaux de rivière palmipèdes	2. rapaces nocturnes
3. oiseaux de rivière non-palmipèdes	3. oiseaux grands et moyens, non rapaces, bien volant
4. oiseaux de campagne, qui font leur nid sur terre	4. petits oiseaux, non rapaces, bien volant
5. oiseaux qui habitent et paissent indifféremment en tous lieux	5. gallinacées et pigeons domestiques
6. oisillons hantant les haies et les buissons	6. gallinacées et pigeons sauvages
	7. oiseaux aquatiques pour la plupart palmipèdes
	a. surtout nageant sur l'eau (palmipèdes)
	b. volant et nageant (palmipèdes)
	c. surtout volant aux environs de l'eau (non-palmipèdes)
	8. oiseaux vivant près de l'eau, non-palmipèdes

23 Le mot 'ordre', utilisé par Belon et Gessner ('ordo'), annonce l'emploi du mot dans la terminologie ornithologique moderne.

24 Nous reprenons, en français moderne, les termes de Belon ; nous traduisons en les simplifiant les termes de Gessner.

Le schéma montre que, grosso modo, l'ordre 1 de Belon coïncide avec les ordres 1 et 2 de Gessner, les ordres 2 et 3 de Belon se retrouvent dans les ordres 7 et 8 de Gessner, alors que les ordres 5 et 6 de Belon correspondent aux ordres 3 et 4 de Gessner. On note, d'autre part, plusieurs différences entre les deux classifications. Ainsi, pour les ordres 1, 2 et 7 de Gessner, celui-ci fait preuve d'une plus grande précision que Belon. La grande différence par rapport à la classification de Belon, ce sont les ordres 5 et 6 de Gessner, distingués entre eux par le critère de la domesticité. Ainsi, Belon et Gessner sont les premiers à proposer une classification ornithologique pratique, principalement fondée sur trois critères, qui est en fait très aristotélicienne : l'habitat, la nourriture et la forme des pieds²⁵. Il faut attendre l'*Ornithologia* (1676) de Willughby et Ray, avant de trouver une classification zoologiquement plus précise, qui donne plus de poids à la morphologie de l'oiseau, et plus particulièrement à la forme du bec.

3 Belon et Cavellat lecteurs de Gessner

À l'inverse, comme le montre le diagramme, c'est aussi Gessner qui influe sur Belon et Cavellat. Regardons, dans cette perspective, les changements les plus importants que Cavellat a apportés aux illustrations de l'*Histoire des oyseaux* : aux 160 illustrations d'oiseaux qui forment la totalité des illustrations de l'*Histoire des oyseaux*, Cavellat ajoute 14 nouvelles illustrations d'oiseaux, et 52 illustrations venant des *Observations*, portant sur des sujets variés mais bien ordonnés (dans l'ordre des *Portraits* : 11 mammifères, 10 autres espèces animales, 15 plantes – des arbres, pour la plupart – 6 hommes et/ou femmes orientaux, 10 cartes)²⁶. Dans les 14 nouvelles illustrations d'oiseaux le rôle de Gessner est important : 8 illustrations sont clairement inspirées par celles de Gessner²⁷. Les oiseaux en question sont assez divers. Certains sont très connus, mais remarquablement bien rendus par Gessner (l'aigle à l'allure héraldique, le chapon et le 'pigeon pâtre'). Si ces oiseaux-ci sont aussi traités dans l'*Histoire des oyseaux*, d'autres, moins connus en France, y manquent, comme

25 Nous remercions Raphaële Garrod qui, au sujet du diagramme, nous a fait remarquer que la classification de Gessner repose aussi sur la négation : rapace/non rapace, domestique/non domestique, palmipède/non palmipède – classification porphyrienne.

26 Nous n'avons pas réussi à trouver une édition ou un exemplaire des *Observations* contenant les 52 illustrations au complet.

27 À savoir : Belon, *Portraits* fol. 12r (aigle), fol. 23v (oiseau de paradis), fol. 28r (engoulevent), fol. 45v (cigogne noire), fol. 53r (échasse blanche), fol. 59r (chapon), fol. 78v ('pigeon pâtre'), fol. 100 (macareux moine à quatre pattes).

la cigogne noire (*Ciconia nigra*) et l'échasse blanche (*Himantopus himantopus*). Cavellat copie aussi l'illustration que Gessner donne de l'oiseau de paradis, en observant : 'Chacun peut voir le plumage de ce bel oiseau étranger, assez connu des grands seigneurs, tant de notre France que du pays de Turquie'. Et Cavellat profite de l'occasion pour corriger une grave erreur de Belon au sujet de l'identité de l'engoulevent d'Europe (*Caprimulgus europaeus*). Cet oiseau aux mœurs secrètes, qui se camoufle pendant la journée et n'est actif que la nuit, ne cesse d'intriguer les savants du xvi^e siècle. Depuis l'Antiquité, on croyait que pendant la nuit cet oiseau tétait le lait des chèvres – comme l'indiquent le nom latin *caprimulgus* ainsi que le nom allemand *Ziegenmelker*. William Turner, ornithologue et ami de Gessner, avoue ne pas avoir réussi à identifier cet oiseau mentionné chez Pline et Aristote. Il nous raconte l'anecdote suivante :

Quand j'étais en Suisse j'ai rencontré un vieillard, qui gardait ses chèvres dans les montagnes, où j'étais en train d'herboriser. Je lui ai demandé s'il connaissait un oiseau de la taille d'un merle, aveugle pendant la journée, qui voit la nuit, et qui a coutume de sucer les mamelles des chèvres, de sorte qu'ensuite les animaux deviennent aveugles. Il a dit que lui-même il en avait vu beaucoup dans les montagnes suisses quatorze ans plus tôt, et qu'il avait subi de nombreuses pertes à cause de ces oiseaux ; [...] mais maintenant il n'y avait plus de *caprimulgi*, parce qu'il sont tous partis pour la Basse-Allemagne, où actuellement ils ne sucent pas seulement le lait des chèvres, les rendant ainsi aveugles, mais ils tuent aussi les brebis. Et lorsque je lui demandai le nom de l'oiseau, il m'a dit que l'oiseau est appelé *Paphus*, c'est-à-dire *prêtre*. Mais peut-être ce vieillard s'est-il moqué de moi. Que ce vieillard soit sérieux ou pas, je n'ai toujours pas d'autre nom allemand pour cet oiseau (nous traduisons)²⁸.

Cette anecdote amusante sera répétée dans toutes les éditions de l'*Historia avium* de Gessner, même dans la version allemande, le *Vogelbuoch* de 1557. Or on constate que Belon lui aussi est en chasse du *caprimulgus*. Il identifie le *caprimulgus* avec la chouette effraie (*Tyto alba*). Cependant, Cavellat, dans les *Portraits*, corrige cette première identification trop hâtive de l'*Histoire des oyseaux* : au sujet du portrait de la chouette effraie (le 'petit chat-huant') [Fig. 2.5], il s'explique²⁹ :

²⁸ Turner, *Avium praecipuarum [...] historia* fol. C5v (chapitre "De caprimulgo").

²⁹ Nous donnons les illustrations des *Portraits* telles qu'elles figurent dans Belon Pierre, *Portraits d'oyseaux, animaux, serpens, herbes, arbres, hommes et femmes d'Arabie et*

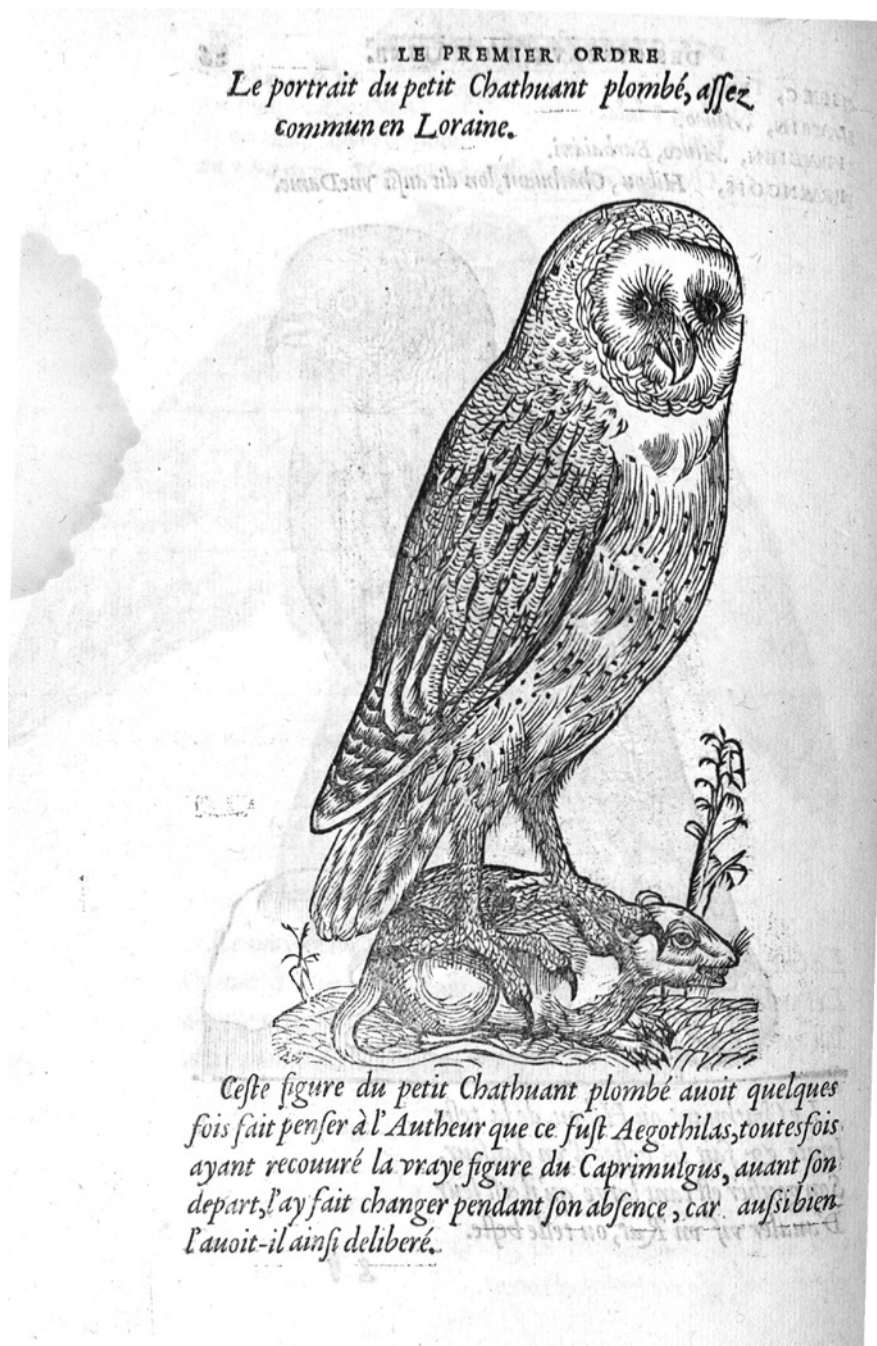


FIGURE 2.5 Effraie. Belon Pierre, *Portraits d'oyseaux [...]* (Paris, Jérôme de Marnef: 1618).
 Fol. 26v. B1U Santé, Paris

Cette figure du petit Chathuant plombé avoit quelques fois fait penser à l'Autheur [i.e. Belon] que ce fust Aegothilas, toutesfois ayant recouvré la vraie figure du *Caprimulgus*, avant son depart, [je] l'ay fait changer pendant son absence, car aussi bien l'avoit-il ainsi delibéré³⁰.

Et il ajoute la 'vraie figure du *Caprimulgus*' [Fig. 2.6], trouvée chez Gessner. Cependant, dans le quatrain qui accompagne l'image, il reste encore quelque chose de la première erreur :

Le hideux cry de la Frezaye effraye
Celuy qui l'oït : elle vole de nuict,
Et à tetter les Chevres prend deduict.
T'esbahis-tu s'elle se nomme Effraye³¹ ?

Non seulement Cavellat persiste dans la superstition séculaire, mais encore il confond le cri de la chouette effraye (qui est en effet effrayant : 'long cri aigu tremblé')³² avec celui de l'engoulevent, qui, selon tel guide ornithologique moderne, produit un 'ronnement sonore, rapide, bas et continu sur deux tons, soutenu jusqu'à 5 minutes' – rien d'effrayant donc³³. Cet exemple montre bien la confusion qui règne lorsqu'il s'agit de conférer, dans une classification donnée, une place à tel oiseau inconnu³⁴.

Un autre exemple intéressant, pris dans Gessner, est l'illustration d'une cane monstrueuse à quatre pieds [Fig. 2.7]. La description de cet oiseau nous montre non seulement l'apport de Gessner, mais également le souci de la classification, ainsi que les problèmes matériels que Cavellat a rencontrés avec ses illustrateurs ou graveurs :

d'Egypte [...] (Paris, Hierosme de Marnef : 1618). Bibliothèque numérique Medic@. Cette édition est une réédition identique à celle de 1557.

30 Belon, *Portraits* fol. 26v.

31 Belon, *Portraits* fol. 28r.

32 Peterson R., *Guide des Oiseaux d'Europe*, trad. P. Gérodet (Neuchâtel – Paris : 1976) 311.

33 Peterson, *Guide des Oiseaux d'Europe* 312.

34 Outre le toucan mentionné ci-dessus, citons aussi l'exemple du *passer solitarius* : voir notre article "*Passer solitarius* : Tribulations of a Lonely Bird in Poetry and Natural History, from Petrarch to Buffon", in Enenkel K.A.E. – Göttler C. (éds.), *Solitudo : Spaces, Places, and Times of Solitude in Late Medieval and Early Modern Europe* (Leyde – Boston : 2018) 531-560.



FIGURE 2.6 Engoulevent. Belon Pierre, *Portraits d'oyseaux* [...] (Paris, Jérôme de Marnef: 1618). Fol. 26v. BIU Santé, Paris

Voyla (amy lecteur) qu'en dit Gesnerus, te suppliant nous avoir pour excusé si ne l'avons pas mise au ranc des autres Cane[s], ce que nous eussions fait, si le portrait eust esté fait à temps³⁵.

Cet exemple nous amène aux six autres illustrations que Cavellat a ajoutées à celles de l'*Histoire des oyseaux*, mais qu'il n'a pas prises dans Gessner. Parmi ces illustrations il y en a cinq qui font écho aux problèmes matériels qui avaient

35 Belon, *Portraits* fol. 100v.



FIGURE 2.7 Cane à quatre pieds. Belon Pierre, *Portraits d'oyseaux* [...] (Paris, Jérôme de Marnef: 1618). Fol. 28r. BIU Santé, Paris

dû exister entre Belon, l'imprimeur et les illustrateurs, lors de la production de *l'Histoire des oyseaux*. C'est que ces illustrations auraient dû être imprimées dans *l'Histoire des oyseaux*, comme le montrent les pages 120 ("De l'esmerillon"), 131 ("Du milan noir"), 170 ("Des mouëttes blanches") et 227 ("Velia ou Helea"), qui contiennent les légendes des illustrations, alors que les illustrations elles-mêmes manquent pour des raisons inexplicables. De même, pour

la page 226 (“Du porphyrio”), on s’attend aussi à une illustration. En donnant donc les illustrations qui manquent dans l’*Histoire des oyseaux*, Cavellat profite de l’occasion pour insérer des corrections d’ordre textuel en recourant, au sujet de la ‘velia’, au texte de Gessner :

Les Almants le voyant hanter les lieux humides par les saules le nomment
Vuiderle, ou bien pource qu’il chante sans fin Zilzel. Et à en dire la verité,
il est des especes du Halcion vocal³⁶.

Ces ajouts rectificatifs prouvent que non seulement les *Portraits*, mais aussi l’*Histoire des oyseaux* sont le résultat d’un travail soigné quoique hâtif. Cette hâte trouve peut-être sa cause dans la parution simultanée des *Icones* de Gessner, qui sont en quelque sorte le plus grand concurrent de Belon. Cette hâte entraîne des erreurs, surtout si, pour la fabrication des illustrations, les illustrateurs et/ou graveurs sont en retard.

Il reste une seule illustration supplémentaire qui ne provient pas de Gessner, et qui ne sert pas à compléter les illustrations manquantes de l’*Histoire des oyseaux* : c’est celle du “Phenix selon que le vulgaire a coustume de le portraire” [Fig. 2.8]. Cette illustration est issue de la tradition récente de l’emblème, inaugurée en 1531 par le *Liber emblematum* d’Andrea Alciato – la source précise ne nous est pas connue, mais l’illustration ressemble beaucoup à la devise de l’imprimeur vénitien Gabriele Giolito de’ Ferrari, ayant pour motto : *Semper eadem* [Fig. 2.9]³⁷. Cette illustration nous met sur la piste de la seconde source d’inspiration des *Portraits* (outre Gessner) : la littérature emblématique.

4 La poétique emblématique des *Portraits*

C’est surtout le *Second livre de la description des animaux, contenant le blason des oyseaux* (1550) de Guillaume Guérout qui est au fondement de la présentation emblématique de ces *Portraits*³⁸. L’adjectif ‘Second’ indique que cet ouvrage est considéré comme une suite : c’est une continuation des *Decades de la Description, Forme, et Vertu Naturelle des Animaux, tant raisonnables,*

³⁶ Belon, *Portraits* fol. 53v.

³⁷ Voir : http://en.wikipedia.org/wiki/File:Giolito_phoenix_1552.jpg (date de consultation: le 17 février 2017).

³⁸ Guérout Guillaume, *Second livre de la description des animaux, contenant le blason des oyseaux* (Lyon, Balthasar Arnoullet : 1550). Sur ce recueil, voir surtout Saunders A., “The Evolution of a Sixteenth-Century Emblem Book : The *Decades de la description des animaux* and *Second Livre de la description des animaux contenant le blason des oyseaux*”, *Bibliothèque d’Humanisme et Renaissance* 38 (1976) 437-457.



FIGURE 2.8 Phénix. Belon Pierre, *Portraits d'oyseaux* [...] (Paris, Jerome de Marnef: 1618).
BIU Santé, Paris



FIGURE 2.9 Phénix. Woodcut printer's device or emblem used by Gabriele Giolito de' Ferrari e Fratelli in: Pantera Giovanni Antonio, *Monarchia del Nostro Signore* (Venice, Giolito: 1552).

FROM: [HTTPS://EN.WIKIPEDIA.ORG/WIKI/](https://en.wikipedia.org/wiki/)

FILE:GIOLITO_PHOENIX_1552.JPG

que Brutz (1549) de Barthélemy Aneau qui porte sur les mammifères³⁹. Ces ouvrages ne sont pas fondés principalement sur l'histoire naturelle ancienne ni sur les ouvrages contemporains, mais sur le symbolisme animal traditionnel originaire des bestiaires médiévaux et des livres proto-emblématiques du XVI^e siècle ayant pour sujet les animaux et les oiseaux, récemment étudiés par

39 Aneau Barthélemy, *Decades de la Description, Forme, et Vertu Naturelle des Animaux, tant raisonnables, que Brutz* (Lyon, Balthasar Arnoullet : 1549).

Alison Saunders⁴⁰. Le livre de Guérout fut un succès : à partir de 1561 il fut réédité plusieurs fois dans la version plus copieuse d'abord établie par Benoist Rigaud.

Ce n'est pas seulement au niveau de la présentation générale et de la mise en page que les *Portraits* sont redevables au livre de Guérout, mais encore à celui du vocabulaire et de la rime. C'est ce qu'on constate en comparant le blason que Guérout consacre au corbeau [Fig. 2.10] au 'portrait' correspondant de l'oiseau chez Cavellat [Fig. 2.11]. Voici le quatrain de Cavellat :

A bien parler le Corbeau peult apprendre,
Il hait luxure, use de cruauté
A ses petits, puis d'eux est maltraitté.
Pere meschant, meschante race engendre⁴¹.

Voici le texte de Guérout, où nous avons mis en italiques les phrases que Cavellat plagie :

Le Corbeau.

Le fier Corbeau couvert de noir plumage,
Propre à parler des hommes le langage.
Luxure hayt : et ayme chasteté.
Et si combat par fierté de courage
Asnes tardifs, et Thoreaux pleins de rage :
Mais le Regnard est de luy supporté.
En son chant n'ha aucune amoenité.
A ses petits use de cruauté,
Voire et du nid durement les dechasse :
Mais pour loyer de telle iniquité,
Des siens il est bien pirement traicté
*Père meschant engendre inique race*⁴².

40 Saunders A., "More French Emblematic Predecessors, Godly and Amorous", *Emblematica* 22 (2016) 69-106, au sujet de trois livres emblématiques portant sur les oiseaux : 'These are first, an anonymous late fifteenth-century collection of epigrammatic verses entitled *Dictz des bestes et aussi des oyseaulx* ; and second, a slightly later collection of illustrated verses on the behaviour of animals and birds included in the 1521 *Menus propos* by the *Rhétoriqueur* poet Pierre Gringore, and last, a work entitled *Sensuyt le bestiaire damours : moralisé sur les bestes et oyseaulx*. *Le tout par figure et histoire*, which connects both with the *Dictz des bestes et aussi de, s oyseaulx*, and with Gringore's work' (85).

41 Belon, *Portraits* fol. 67v.

42 Guérout G., *Second livre de la description des animaux, contenant le blason des oyseaux* (Lyon, Balthasar Arnoullet : 1550) 2.

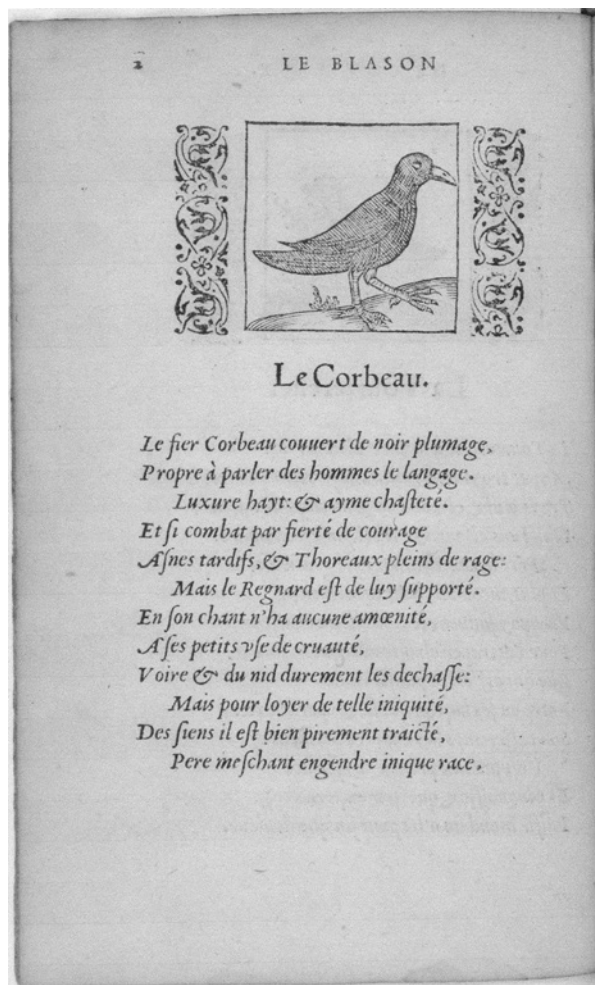


FIGURE 2.10 Corbeau. Guérout Guillaume, *Second livre de la description des animaux, contenant le blason des oyseaux* (Lyon, B. Arnoullet: 1550) 2.
 BIBLIOTHÈQUE NATIONALE DE FRANCE,
 DÉPARTEMENT ARSENAL, 8-BL-11101 (2)

Ce n'est pas le seul emprunt à Guérout. Ainsi, sur la chauve-souris, on lit chez Cavellat : 'En petit corps grande vertu reluit'⁴³, et chez Guérout : 'Qu'en petit lieu gist tressor de grand prix'⁴⁴.

43 Belon, *Portraits* fol. 28v.

44 Guérout, *Second livre* 27.



FIGURE 2.11 Corbeau. Belon Pierre, *Portraits d'oyseaux* [...] (Paris, Jérôme de Marnef: 1618). Fol. 67v. BIU Santé, Paris

Par ailleurs, ces exemples ('Père meschant, meschante race engendre' et 'En petit corps grande vertu reluit') montrent bien une certaine tendance chez Cavellat à moraliser la nature – ce qui vaut surtout pour les oiseaux connus dans la tradition emblématique. Voici une petite anthologie des vers finals :

Le cygne : 'Qui est pour l'homme enseignement insigne'⁴⁵

Le pélican : 'Il fault avoir remord / Que Iesus Christ pour les siens fait le mesme'⁴⁶

La cigogne : 'Ainsi chacun d'aider soit envieux / Son pere vieil tombé en decadence'⁴⁷

La colombe : 'Aymons comme eux amitié mutuelle'⁴⁸

Ces morales témoignent d'une tendance à 'l'emblématisation' de la nature⁴⁹. Cependant, pour la grande majorité des oiseaux cette emblématisation est simplement impossible, parce que, faute d'information disponible ou de symbolisme traditionnel, la plupart des oiseaux en question ne se prêtent pas d'emblée à la moralisation. C'est ce qui oblige Cavellat à recourir au texte même de Belon pour trouver la matière de ses quatrains. En voici un exemple, celui du vanneau, oiseau dépourvu de symbolisme traditionnel :

Voy cy dessus le portraict du vanneau,

Et le voyant, pourras ta veuë paistre :

Mais si tu veulx d'un bon morceau repaistre

Il ya peu de meilleurs oyseaux d'eau⁵⁰.

On sent ici la difficulté de Cavellat pour remplir le quatrain : les deux premiers vers sont des chevilles, et les deux derniers vers thématisent une donnée très importante pour Belon, Cavellat et leurs lecteurs : la comestibilité de l'oiseau en question. Ainsi, les autres quatrains nous apprennent que le héron est un mets royal, la chair du coq de bois a deux goûts différents, et la chair du

45 Belon, *Portraits* fol. 24r.

46 Belon, *Portraits* fol. 30v.

47 Belon, *Portraits* fol. 45r.

48 Belon, *Portraits* fol. 78r.

49 Sur cette vision du monde, voir Ashworth W.B. Jr., "Natural History and the Emblematic World View", in Lindberg D.C. – Westman R.S. (eds.), *Reappraisal of the Scientific Revolution* (Cambridge : 1990) 373-398.

50 Belon, *Portraits* fol. 47r.

ramier a pour effet secondaire de ‘retarde[r] la luxure’⁵¹. Toutes ces informations, Cavelat les a trouvées dans Belon, mais c’est le choix de ces informations comme sujet des quatrains qui nous renseigne sur le public visé, amateur de bonne chère.

Ce public s’intéresse aussi aux noms des oiseaux, quoiqu’il ne se passionne pas pour les étymologies savantes, comme le font Belon et Gessner. Ainsi l’aigrette :

Non sans raison plusieurs noms sont baillez
Tant aux oyseaux, qu’autres diverses bestes :
Car mesme ceux qui se nomment Aigrettes,
Pour leur voix aigre ainsi sont appelez⁵².

C’est ainsi que Cavellat nous informe sur l’onomastique de la spatule⁵³, du bruant⁵⁴, etc. Ce faisant, il n’échappe pas toujours à la tautologie : la roussette est appelée ‘roussette’ parce qu’elle est rousse⁵⁵, le ‘chantre’ ne cesse de chanter⁵⁶, le verdier est vert⁵⁷, le mouchet vit de mouches⁵⁸, le pinson pince⁵⁹, le ‘pinson montain’ vit en montagne⁶⁰, et ainsi de suite. Cavellat fait aussi épreuve d’une certaine préférence pour les proverbes et les locutions trouvés dans l’*Histoire des oyseaux* de Belon : ‘c’est un butor’⁶¹, ‘ressembler au torchepot’⁶², ‘trouver le nid d’une oriole’⁶³. Parfois ses informations ne viennent pas de Belon : lorsqu’il dit que l’émerillon ‘a le cœur gay’⁶⁴, il pense peut-être à Rabelais, qui écrit : ‘joyeux comme un émerillon’⁶⁵. Et les informations fantaisistes qu’il donne sur le francolin ne viennent pas non plus de Belon :

51 Belon, *Portraits* fols. 42r, 60v, 76v, respectivement.

52 Belon, *Portraits* fol. 43v.

53 Belon, *Portraits* fol. 43r.

54 Belon, *Portraits* fol. 94v.

55 Belon, *Portraits* fol. 84v.

56 Belon, *Portraits* fol. 86v.

57 Belon, *Portraits* fol. 94r.

58 Belon, *Portraits* fol. 98v.

59 Belon, *Portraits* fol. 96v.

60 Belon, *Portraits* fol. 97r.

61 Belon, *Portraits* fol. 42v ; *Histoire des oyseaux* 192.

62 Belon, *Portraits* fol. 75v ; *Histoire des oyseaux* 305.

63 Belon, *Portraits* fol. 73v ; *Histoire des oyseaux* 296.

64 Belon, *Portraits* fol. 19r.

65 Rabelais François, *Œuvres complètes*, éd. M. Huchon (Paris : 1994) 693.

Le Francolin, estant oyseau de pris,
 En liberté chante et se taist en cage.
 Aussi celui, qui a peu de langage,
 Est dit muet, comme un Francolin pris⁶⁶.

Afin de susciter l'intérêt du lecteur Cavellat recourt aussi aux informations sensationnelles et érotiques : ainsi sur le canard d'Inde, tout ce que Cavellat a à dire c'est que cet oiseau a un membre génital énorme⁶⁷, selon lui, le porphyryon tenu en cage est capable de démasquer l'adultère⁶⁸, et Cavellat s'arrête sur la luxure des moineaux⁶⁹, et les tendances homosexuelles et nécrophiles respectives de la perdrix et de la corneille⁷⁰. Le caractère assez superficiel des quatrains apparaît par ailleurs aussi dans les portraits non ornithologiques. En témoigne l'exemple suivant qui en dit assez sur le manque de profondeur intellectuelle de Cavellat (et/ou de son lectorat visé) : il ne fait que se moquer de l'Arabe, alors que Belon en donne une description précise et sérieuse :

Portrait d'un villageois Arabe
 Voy de ce Turc la houpelande esparsée,
 Le bras tout nud, l'arc, l'espée, et la dague,
 Et sa cheminse entour ses iambes vague :
 Diras-tu pas, qu'il veult iouër la farce⁷¹ ?

5 Conclusion

Quelle est la place du recueil de Cavellat dans le contexte de l'histoire naturelle et de l'emblématique ? Cette place s'avère ambiguë. Si ce recueil complète et corrige certains aspects ornithologiques de l'*Histoire des oyseaux* de Belon, par son emblématisation, il semble faire un pas en arrière par rapport aux prétentions scientifiques de Belon, telles qu'il les exprime dans son livre. Belon, en effet, ne tire jamais de morale de l'histoire naturelle de ses oiseaux. Mais rien n'est simple : c'est que, par rapport au livre d'emblèmes de Guérout, où la nature entière est moralisée selon une tradition séculaire, originaire du

66 Belon, *Portraits* fol. 57v.

67 Belon, *Portraits* fol. 37r.

68 Belon, *Portraits* fol. 52r.

69 Belon, *Portraits* fol. 91v.

70 Belon, *Portraits* fols. 62r, 68r.

71 Belon, *Portraits* fol. 122r.

Physiologus du 11^e siècle après J.-C., les textes de Cavellat, malgré leur superficialité intellectuelle, représentent un pas en avant dans ce que Max Weber a appelé le ‘désenchantement du monde’, parce que, le plus souvent, ils ne comportent pas de morale. Aussi ce recueil montre-t-il que, à l’époque prémoderne, ni le développement de l’histoire naturelle ni celui du genre emblématique ne se font de façon linéaire, mais ils suivent, au contraire, une trajectoire tortueuse, pleine de traverses, de détours, et d’impasses.

Bibliographie

- Aneau Barthélemy, *Decades de la Description, Forme, et Vertu Naturelle des Animaux, tant raisonnables, que Brutz* (Lyon, Balthasar Arnoullet : 1549).
- Ashworth W.B. Jr., “Natural History and the Emblematic World View”, in Lindberg D.C. – Westman R.S. (éds.), *Reappraisal of the Scientific Revolution* (Cambridge : 1991) 303-332.
- Belon du Mans Pierre, *L'Histoire de la nature des Oyseaux. Fac-similé de l'édition de 1555*, éd. P. Glardon (Genève : 1997) (édition originale : Paris, Guillaume Cavellat : 1555).
- Belon du Mans Pierre, *Portraits d'oyseaux, animaux, serpens, herbes, arbres, hommes et femmes d'Arabie et d'Égypte : le tout enrichy de quatrains, pour plus facile cognoissance des oyseaux et autres portraits* (Paris, Guillaume Cavellat : 1557) (plusieurs rééditions).
- Brunfels O., *Herbarum vivae eicones*, 3 vols. (Strasbourg, Joannes Schottus : 1530-1536).
- Egmond F., *The Worlds of Carolus Clusius : Natural History in the Making* (Londres : 2010).
- Gessner Conrad, *Historiae animalium liber III, qui est de avium natura* (Zurich, Christoph Froschauer : 1555).
- Gessner Conrad, *Icones avium omnium, quae in Historia avium Conradi Gesneri describuntur* (Zurich, Christoph Froschauer : 1555 ; deuxième édition 1560).
- Glardon P., “Gessner Studies : State of the Research and New Perspectives on 16th-Century Studies in Natural History”, *Gesnerus* 73 (2016) 7-28.
- Glardon P., *L'Histoire naturelle au XVI^e siècle. Introduction, étude et édition critique de La nature et diversité des poissons de Pierre Belon (1555)* (Genève : 2011).
- Guérault Guillaume, *Second livre de la description des animaux, contenant le blason des oyseaux* (Lyon, Balthasar Arnoullet : 1550).
- Kusukawa S., *Picturing the Book of Nature : Image, Text, and Argument in Sixteenth-Century Human Anatomy and Medical Botany* (Chicago : 2012).
- Leu U.B., “Conrad Gessners Netzwerk”, in Leu U.B. – Ruoss M. (éds.), *Facetten eines Universums. Conrad Gessner 1516-2016* (Zürich : 2016) 61-74.
- Peterson R., *Guide des oiseaux d'Europe*, trad. P. Géroutet (Neuchâtel – Paris : 1976).

- Pinon L., *Livres de zoologie de la Renaissance : une anthologie* (Paris : 1995).
- Rabelais François, *Œuvres complètes*, éd. M. Huchon (Paris : 1994).
- Rikken M. – Smith P.J., “Jan Brueghel's *Allegory of Air* (1621) from a Natural-Historical Perspective”, *Netherlandish Yearbook for History of Art* 61 (2011) 86-115.
- Rikken M., “Abraham Ortelius as Intermediary for the Antwerp Animal Trailblazers”, *Jahrbuch für Europäische Wissenskulturr / Yearbook for European Culture of Science* 6 (2011) 95-128.
- Rikken M., *Dieren verbeeld. Diervoorstellingen in tekeningen, prenten en schilderijen door kunstenaars uit de Zuidelijke Nederlanden tussen 1550 en 1630* (Leyde : 2016).
- Saunders A., “More French Emblematic Predecessors, Godly and Amorous”, *Emblematica* 22 (2016) 69-106.
- Saunders A., “The Evolution of a Sixteenth-Century Emblem Book : The *Decades de la description des animaux* and *Second Livre de la description des animaux contenant le blason des oyseaux*”, *Bibliothèque d'Humanisme et Renaissance* 38 (1976) 437-457.
- Smith P.J., “On Toucans and Hornbills: Readings in Early Modern Ornithology from Belon to Buffon”, in Enenkel K.A.E. – Smith P.J. (éds.), *Early Modern Zoology. The Construction of Animals in Science, Literature and the Visual Arts* (Leyde – Boston: 2007) 75-119.
- Smith P.J., “*Passer solitarius*: Tribulations of a Lonely Bird in Poetry and Natural History, from Petrarch to Buffon”, in Enenkel K.A.E. – Göttler C. (éds.), *Solitudo: Spaces, Places, and Times of Solitude in Late Medieval and Early Modern Europe* (Leiden – Boston: 2018) 531-560.
- Smith P.J., “Inconstant et variable. Le caméléon entre histoire naturelle et emblématique”, *Textimage Varia* 4 (Printemps 2014), https://www.revue-textimage.com/09_varia_4/smith4.html.
- Swan C., “Ad vivum, naer het leven, From the Life: Defining a Mode of Representation”, *Word and Image* 11, 4 (1995) 353-372
- Turner William, *Avium praecipuarum, quarum apud Plinium et Aristotelium mentio est, brevis et succinta historia* (Cologne, Johann Gymnich: 1544).

Feeling Divine Nature: Natural History, Emotions and Bernard Palissy's Knowledge Practice

Susan Broomhall

This essay examines the participation of Protestant potter and author Bernard Palissy, 'inventor of rustic figulines' and supplier of ceramic artefacts and installations to the late sixteenth-century French court, within sixteenth-century natural-historical production.¹ Palissy's ceramic works presented striking intricate designs of plant and animal life present in ponds and swamps, while his published texts elaborated complex systems about the natural world in which the specific properties of waters and salts acted in powerful ways. I argue that Palissy's knowledge was revealed through an integrated oral, textual and material practice, which represented a method for both discovering and disseminating what he apprehended through his emotions. It was an affective practice of natural history that was produced through individual aesthetic appreciation, spiritual revelation and emotional response to both scholarly works and sensory experiences of spaces and objects to be touched, seen, heard and smelled. However, as I explore here, Palissy did not enjoy the sociality, stimulation and validation of like-minded practitioners, factors that helped other scholars to form a sense of themselves as a cohort and of their practices as constituting disciplinary techniques. For this reason, modern scholarship rarely envisages his unique affective knowledge production alongside the natural history of his contemporaries. Indeed, Palissy's unusual method of apprehension and dissemination through highly individual textual and material practices both emerged from, and resulted in, his lack of integration alongside practitioners of natural history of his era.

Bernard Palissy was a glass painter, land surveyor, preacher, author, and self-taught ceramicist who became a favoured artist of the royal court in 1548 where his unique ceramic style captured the interest and patronage of first Anne de Montmorency and then Catherine de Médicis. Recent excavations

1 As recorded on the title-page of his *Recepte veritable par laquelle tous les hommes de la France pourront apprendre à multiplier et augmenter leurs thresors* [...] par Maistre Bernard Palissy, ouvrier de terre, et inventeur des Rustiques Figulines [...] (La Rochelle, Barthelemy Berton: 1563).

have located the site of his workshops and kilns during these years within the Tuileries gardens.² Royal patronage also offered Palissy for a time some measure of protection to practise his Protestant faith during the upheavals of the religious wars and the intensification of Catholic political and religious dominance in Paris. His multiple occupations were characteristic of a determined and curious personality, holding as fast to vast interests in the natural world around him as to his faith. Palissy travelled widely, collecting specimens across France to advance his knowledge about the natural world. What he acquired was presented in printed publications, public lectures in Paris that covered an ambitious array of subjects from the waters of rivers and wells, metals and mithridatium, to vegetable and generative salts, precious gems, ice and the formation of stones, and through a cabinet of curiosities that he advertised as open to the perusal of interested scholars. Palissy had earlier assumed the duties of a preacher in the town of Saintes, and his Protestant beliefs were foundational to his natural-philosophical and natural-historical ideas. His faith eventually saw him exiled to Sedan and finally imprisoned in Paris, dying in the Bastille in 1590.³

Scholarly interest in Palissy has increased rapidly in recent years. He has been explored as a ceramic technician and artist,⁴ for his faith,⁵ his artisanal

- 2 Dufay B. – Kisch Y. de – Poulain D. – Roumegoux Y. – Trombetta P.J., "L'Atelier parisien de Bernard Palissy", *Revue de l'art* 78 (1987) 35-60; Dufay B. – Trombetta P.J., "Un atelier d'art et d'essai aux Tuileries", in *Bernard Palissy. Mythe et réalité. Catalogue d'exposition Palissy à Saintes* (Niort – Agen: 1990) 56-67; Kisch Y. de, "Une réapparition archéologique", in Lestringant F. (ed.), *Actes du Colloque Bernard Palissy, 1510-1590: L'Écrivain, le réformé, le céramiste: journées d'études 29 et 30 juin, 1990, Saintes – Abbaye-aux-Dames* (Mont-de-Marsan-Niort: 1992) 183-86; Crépin-Leblond T. (ed.), *Une orfèvrerie de terre. Bernard Palissy et la céramique de Saint-Porchaire, exposition du Musée national de la Renaissance, Château d'Ecouen, 24 septembre 1997-12 janvier 1998* (Paris: 1997).
- 3 For biographical studies, see Audiart L., *Bernard Palissy, étude sur sa vie et ses travaux* (Paris: 1868); Dupuy E., *Bernard Palissy, l'homme, l'artiste, le savant, l'écrivain* (Paris: 1902; Geneva: 1970).
- 4 Amico L.N., "Les Céramiques authentiques de Bernard Palissy", *Revue de l'art* 78 (1987) 61-66; Poulain D., "Les Rustiques figulines du Musée des Beaux-Arts de Lyon", *Bulletin des musées et monuments lyonnais* 3-4 (1993) 24-27; Poulain D., "Sources du répertoire décoratif de l'atelier des Tuileries", in *Actes du Colloque Bernard Palissy, 1510-1590* 187-199; Amico L.N., *Bernard Palissy. In Search of Earthly Paradise* (Paris: 1996); Perrin I., *Les Techniques céramiques de Bernard Palissy*, 2 vols. (Paris: 2000).
- 5 Lestringant F., "Le Prince et le Potier: introduction à la 'Recepte Veritable' de Bernard Palissy (1563)", *Nouvelle Revue du seizième siècle* 3 (1985) 5-24; Trocmé E., "Bernard Palissy, témoin de l'enthousiasme moral des premiers réformés français", in *Actes du Colloque Bernard Palissy, 1510-1590* 39-56; Randall C., "Structuring Protestant Scriptural Space in Sixteenth-Century Catholic France", *Sixteenth Century Journal* 25 (1994) 341-352.

origins,⁶ and is now beginning to be considered as one of the more unusual contributors to early natural history and philosophy.⁷ The precise degree of his contribution to contemporary natural history is however a matter of debate. While, for some, Palissy was little more than a compiler of available scientific ideas, others see his ceramic works as 'expressive embodiments – both heuristic and illustrative – of his innovative, and sometimes controversial, theories about natural history.'⁸ In this essay, I consider natural history in three ways: as knowledge produced within a particular community that defined what scholarly identity, interactions and practices looked like; as knowledge produced according to a shared epistemology that aimed to systematize a historically-contingent practice of observation within that community; and as knowledge produced in technologies that enabled and communicated both community and systematization.⁹ With these aspects of natural history in mind, Palissy's practice was deeply problematic as contemporary natural history.

One of the challenges of interpreting Palissy's contributions to natural history resides in reconciling his claims to innovation as 'neither Greek, nor

6 Fragonard M.-M., "Bernard Palissy: héritage de la science écrite et transmission des connaissances techniques", in Roig Miranda M. (ed.) *La Transmission du savoir dans l'Europe des XVI^e et XVII^e siècles* (Paris: 2000) 27-42; Shell H.R., "Casting Life, Recasting Experience: Bernard Palissy's Occupation between Maker and Nature", *Configurations* 12, 1 (2004) 1-40, reprinted as "Earthworks: The Ceramic Display of Natural Knowledge in Clay", in Klein U. and Spary E.C. (eds.), *Materials and Expertise in Early Modern Europe*, (Chicago: 2010) 50-70; Smith P.H., *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago: 2004), specifically 100-106.

7 Armogathe J.R., "L'Homme de science", in *Bernard Palissy. Mythe et réalité* 24-27; Kemp M. "Palissy's Philosophical Pots: Ceramics, Grottoes and the Matrice of the Earth", in Tega W. (ed.), *Le Origini della modernità*, vol. 2: *Linguaggi e saperi nel XVII secolo*, 2 vols. (Milan: 1999) 72-78; Kemp M., *Visualizations: The Nature Book of Art and Science* (Berkeley: 2000) 18-19.

8 Quote from Shell, "Casting Life" 5. For doubts about his originality, see Thorndike L., *A History of Magic and Experimental Science*, vol. 5: *The Sixteenth Century* 14 vols. (New York: 1941) 596-599; Duhem P., "Léonard da Vinci, Cardan et Bernard Palissy", *Bulletin Italien* 6, 4 (1906) 289-320; Cameron K., "L'originalité de Bernard Palissy", in *Actes du Colloque Bernard Palissy*, 1510-1590 133-143.

9 Daston L. – Lunbeck E., "Introduction: Observation Observed", and Pomata G., "Observation Rising: Birth of an Epistemic Genre, ca. 1500-1650", in Daston L. – Lunbeck E. (eds.), *Histories of Scientific Observation* (Chicago: 2011) 1-9, 45-80; Findlen P., "The Formation of a Scientific Community: Natural History in Sixteenth-Century Italy", in Grafton A. – Siraisi N. (eds.), *Natural Particulars: Nature and the Disciplines in Renaissance Europe* (Cambridge Mass.: 1999) 369-400; Findlen, "Natural History", in Park K. – Daston L. (eds.) *The Cambridge History of Science*, vol. 3: *Early Modern Science*, 5 vols. (Cambridge: 2006) 435-468; Ogilvie B.W., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2006); idem, "La Storia naturale tra libro ed esperienza", in Clericuzio A. – Ernst G., (eds), *Il Rinascimento italiano e l'Europa*, vol. 5: *Le scienze* (Vicenza: 2008) 163-178.

Hebrew, nor Rhetorician, but a mere artisan with very poor learning'¹⁰ – a stance that Pamela H. Smith has suggested expressed 'a specific artisanal epistemological radicalism'¹¹ – while at the same time demonstrating a desire to participate in a wider, scholarly community that could test his ideas and whose members in sixteenth-century France were likely to be Catholic and university-trained, unlike Palissy. As James J. Bono has argued, specific hermeneutical strategies emerged from precise social and cultural communities of knowledge, and Peter Harrison suggests, increasingly, in the early modern period, 'tests for the trustworthiness of observers stressed social status, education and training, personal virtues, and institutional settings'.¹² Lacking access to his fellow scholarly natural historians in France as a result of his artisanal and professional status, was, I argue, both a cause and a result of Palissy's unique practice that emerged from emotional engagement with the world around him and that was produced through technologies that were not shared by contemporary scholars. He was thus unable to transmit his contributions to them in ways that they recognised for the production of natural history.

Palissy shares much in common with the generation of natural historians described by Brian W. Ogilvie as engaged in 'phytographic exploration'.¹³ These scholars of the 1530s and 1540s pursued field studies with an almost devotional zeal, often forming cohorts to 'discover', collect and document botanical matter in their local regions. They placed value on their own experiences and even highlighted the physical and emotional hardships of their endeavour. Yet Ogilvie observes that the 'sober prose of natural history texts disguised this labor, except in the occasional prefatory remark, but it was an important means for the community of naturalists to constitute itself'.¹⁴ Palissy likewise travelled extensively through various regions of France, but he described himself as a

10 'ne Grec, ne Hébreux, ne Poete, ne Rhetoricien, ains un simple artisan bien pauvrement instruit aux lettres', "A Monseigneur le Mareschal de Montmorancy", *Recepte véritable* in Palissy, *Œuvres complètes*, eds. K. Cameron – J. Céard – M.-M. Fragonard – M.-D. Legrand – F. Lestringant – G. Schrenk, (Paris: 2010) 92. All translations are mine unless otherwise stated.

11 Smith P.H., "Giving Voice to the Hands: the Articulation of Material Literacy in the Sixteenth Century", in Trimbur J. (ed.), *Popular Literacy: Studies in Cultural Practices and Poetics* (Pittsburgh: 2001) 74-93, specifically 76. Other scholars have understood Palissy's claim as an aspect of the modesty *topos* of the era.

12 Harrison P., "Natural History", in Harrison P. – Numbers R.L. – Shank M.H. (eds.), *Wrestling with Nature: From Omens to Science* (Chicago: 2011) 117-148, specifically 124.

13 Ogilvie, "Travel and Natural History in the Sixteenth Century", in Ogilvie B.W. – te Heesen A. – Gierl M. (eds.), *Sammeln in der Frühen Neuzeit* (Berlin: 1996) 3-28, specifically 10.

14 Ogilvie, "Travel and Natural History" 21.

lone participant in these endeavours and what he documented were individual, explicitly affective, experiences of the world around him. Emotions thus produced early modern knowledge in varied ways.¹⁵ Where shared emotional experiences in the wilderness brought the mainstream community of naturalists together, Palissy, the self-proclaimed outsider, made emotions central to his production of natural-historical knowledge in a very different way, as a spiritual act of *contemplating* nature, and one that problematized how a singular affective experience of the world could participate in the development of the discipline of natural history that systematized modes of knowledge production about the natural world.

Palissy challenged contemporary natural history not only by his particular emotional approach but also by the technologies he employed. Printed texts and lectures were standard 'technologies of the literal,' to apply the term of James J. Bono, so too was Palissy's cabinet of curiosities that he made available to scholars.¹⁶ But far more problematic as a technology of natural-historical apprehension and dissemination were Palissy's ceramic works – because of their unusual form but also because of the particular community in which they circulated his findings: not one of natural historians but the French court, where his most important patron was a woman, Catherine de Médicis.¹⁷ The practices and processes that produced natural history and knowledge more broadly have been of interest to scholars from a wide range of disciplines. Sociologists Bruno Latour or Karin Knorr Cetina have sought to emphasize 'knowledge as practiced – within structures, processes, and environments that make up *specific* epistemic settings,'¹⁸ while for the early modern period, the work of Lorraine Daston and Elizabeth Lünbeck on scientific observation as a constructed,

15 See Broomhall S. (ed.), *Ordering Emotions in Europe, 1100-1700* (Leiden – Boston: 2015).

16 Bono J.J., "The Two Books and Adamic Knowledge: Reading the Book of Nature and Early Modern Strategies for Repairing the Effects of the Fall and of Babel", in Mandelbrote S. – Van der Meer, J.M. (eds.) *Nature and Scripture in the Abrahamic Religions: Up to 1700* (Leiden – Boston: 2008) 317-325.

17 There has been strong recent interest in the significance of the corporeal in Palissy's natural knowledge. See P.H. Smith and H.R. Shell above, and more broadly on this topic, Smith P.H., "The History of Science as a Cultural History of the Material World", in Miller P.N. (ed.), *Cultural Histories of the Material World* (Ann Arbor: 2013) 210-225.

18 Knorr Cetina K., *Epistemic Cultures: How the Sciences Make Knowledge* (Cambridge, Mass.: 1999) 8; Latour B. – Woolgar S., *Laboratory Life: The Construction of Scientific Facts* (Princeton: 1979); Latour B., *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge, Mass.: 1987); Barad K., "Posthuman Performativity: Towards an Understanding of How Matter Comes to Matter", *Signs: Journal of Women in Culture and Society* 28 (2003) 801-831; idem, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter* (Durham, NC: 2007).

historically contingent set of shared practices also makes clear how knowledge is produced and documented within specific networks of sociability.¹⁹ Palissy's natural history was enacted through textual and material performances that were vitally emotional and multisensory. Using glazed blues, greens and browns in the manner of jasper, life casts of fish, lizards, snakes, shells, lobsters and frogs as well as of ferns and foliage, Palissy created vivid and dynamic visualisations reminiscent of the marshlands of the Saintonge region which he roamed in the formative years of his adult life. These works were an integral part of his search for answers, a process of perception that was formed through Palissy's emotions – his desire to know and to prove that he could succeed. Palissy's ceramics should therefore be considered together with his published texts and his decisions to preach and lecture as a coherent set of practices producing knowledge about the natural world, apprised through the emotions.

1 Earth and Fire: Emotional Encounters with Matter

The spark at the origin of Palissy's lifelong passion for natural history was his affective response to an object. Twenty-five years afterwards, he recalled the day when he was shown

an earthen cup, fashioned and enamelled with such beauty that since then I have been in turmoil with my own mind, remembering some of the comments that were said to me, mocking me, when I painted images.²⁰

Palissy turned such disparaging remarks, which he notes repeatedly across his texts, and his own doubts about his capacity, into a power that he proudly displayed in the very texts that celebrated his triumph; they stoked the fire of his determination. His deeply emotional response to this object and to the disapproval and mockery of others sustained him over the long term. By his own

19 See references at n. 14 above.

20 'une coupe de terre, tournée et esmaillée d'une telle beauté que deslors j'entray en dispute avec ma propre pensée, en me rememorant plusieurs propos, qu'aucuns m'avoient tenus en se moquant de moy, lors que je peindois les images'. "De l'Art de terre, de son utilité, des esmaux et du feu", *Discours admirables, de la nature des eaux et fontaines, tant naturelle qu'artificielles, des métaux, des sels & salines, des pierres, des terres, du feu et des emaux. Avec plusieurs autres excellens secrets des choses naturelles* (Paris, Martin le Jeune: 1580) in Palissy, *Œuvres complètes* 486.

account of trials and hardships, Palissy laboured for sixteen years in attempts to replicate the stunning form of that cup. Although he was ultimately unable to realize white enamel, Palissy developed a unique and captivating style of his own. In doing so, he documented in material and textual forms a natural-historical knowledge that was the result of the affective experience of hard labour that demanded patience to persevere against the resistance of nature itself. Both time on the one hand, and physical and emotional effort on the other, were required to access the 'secret' knowledge of matter that was gained in singular instances.

Palissy's decision to make his own enamel required him to learn a series of technical processes, each of which forced him to delve deeper into encounters with the natural world. These were the subject of Palissy's quasi-autobiographical chapter in which he proposed to reveal the 'secrets' that he had found through 'the art of pottery, together with the composition and diverse effects of enamel' in his *Discours admirables*, published in 1580.²¹ As Palissy himself argued, 'a man who seeks the art of pottery is always an apprentice because of the unknown nature of different soils.'²² Given that few precise secrets were revealed, some scholars have suggested that Palissy's emphasis on the hardships of his profession may have been intended to put off potential competitors to his commercial markets. Marie-Madeleine Fragonard has by contrast proposed that the narrative that Palissy produced of repeated catastrophes, which nonetheless led to revelation, exploited long-held myths about the process of artistic creation.²³ She argues that, over the course of his account, the reader follows Palissy's path from an orderly existence to a marginal, obsessive but ultimately creative, space.²⁴ However, Palissy's many repeated expressions of his emotional state have not been brought to bear on his knowledge as anything other than as evidence of his physical and mental degradation.²⁵ In this section, I explore a series of Palissy's affective responses to, and impetus from, his encounters with matter, from different types of clay, to furnaces and temperatures.

21 'l'art de terre, ensemble les compositions et divers effects des esmaux'. "De l'Art de Terre" in *Œuvres complètes* 485.

22 'un homme qui besongne de l'art de terre, est tousjours apprentif à cause des natures inconnuës és diversitez des terres'. "Des Terres d'Argile", *Discours* in *Œuvres complètes* 476.

23 Fragonard M.-M., "Les meubles de Palissy: Biographie d'artiste, légende et mythes", in *Actes du Colloque Bernard Palissy, 1510-1590* 25. See also Thauré M., "Bernard Palissy: Le Savant derrière le mythe", in Dhombres J.G. (ed.), *Aventures scientifiques: savants en Poitou-Charentes du XVI^e au XX^e siècle* (Poitiers: 1995) 160-171.

24 Fragonard, "Les meubles de Palissy" 27.

25 Ibidem 32.

Among his early challenges was Palissy's struggle to determine the correct firing temperature for the specific types of clay he used. This was no mere mechanical process of trial and error but a whole body labour of feelings and physical capabilities. Palissy described how he had 'struggled several years thus, imprudently, with sadness and sighs'.²⁶ Significantly, Palissy's emotions are continually foregrounded in the textual account in which he explained how he developed his knowledge of the 'art of clay'. When the sample pieces that he had sent for firing in the kilns of professional enamellists came back in ruins, 'I received nothing but shame and loss'.²⁷ Palissy regularly emphasised the opacity of his materials, which required a calm patience that he, at first, lacked:

Because I did not know why my experiments had not worked, I placed [...] the blame on the materials [...] always at great cost, loss of time, confusion and sorrow.²⁸

Dispirited, he briefly abandoned his quest to discover 'the secret of enamels'.²⁹ However, having taken up paid work once more, Palissy discovered that his feelings had changed: 'I regained my affection to pursue the path of enamels'.³⁰

Palissy then considered whether the kilns of glassmakers, fired at higher temperatures than those of potters, might be a better resource for his distinct clay materials. After trialling some three hundred samples, he discovered one among them that had turned out well: 'this test turned out white and polished, which caused me such joy that I thought I had become a new creature'.³¹ Palissy reflected that this was a revelation from God just when 'I began to lose courage'.³² At each new stage, Palissy's emotional state – from frustration and despair to enthusiasm – were central to his progress.

Palissy then moved to construct his own furnace. It too was a task that would involve him in physical and emotional suffering. In one of the most famous episodes of his trials, Palissy recounted how he was 'forced to burn the palings

26 'bastelé plusieurs années ainsi imprudemment avec tristesse et soupirs'. Palissy, "De l'Art de terre", in *Œuvres complètes* 487.

27 'je n'en recevois que honte et perte'. Ibidem 488.

28 'parce que je n'avois connoissance de la cause pourquoy mes espreuvres ne s'estoyent bien trouvées, je mettois [...] le blasma sus les matières [...] tousjours avec grands frais, perte de temps, confusion et tristesse'. Ibidem 488.

29 'les secrets des esmaux'. Ibidem 488.

30 'je reprins encores l'affection de poursuyvre à la suite desdits esmaux'. Ibidem 488.

31 'laquelle espreuve se trouva blanche & polie de sorte qu'elle me causa une joye telle que je pensois estre devenu nouvelle creature'. Ibidem 489.

32 'je commençois à perdre courage'. Ibidem 489.

that fenced my garden [...] the tables and flooring of the house [...] I was in such anguish'.³³ However, his emotions made possible remarkable achievement: 'the desire that I had to succeed in my endeavour made me do things that I would have thought impossible'.³⁴ Just when he thought he was on the right path, however:

My sorrows and pains were increased so greatly that I lost all countenance. For, however good my enamels and work were, two accidents had occurred to the furnace that ruined everything.³⁵

The flinty mortar that he had used for his furnace had exploded in the heat and left incrustations in the pottery. Palissy was devastated: '[I] lay down in melancholy'.³⁶

The explicit and deliberate manner in which Palissy articulated his dynamic affective experiences suggests more than simply a dramatic turn of phrase. The apprehension of meaning about matter in the natural world was experienced by Palissy in ways that were both physical and emotional. As Hanna Rose Shell suggests, human 'endurance and craftsmanship triggered simultaneous artefactual and epistemological generation'.³⁷ Yet Palissy's affective responses to matter were crucial to the decisions he made about his practices and the knowledge that he produced through them. His pain and suffering were justified by the 'secret' nature of matter, whether earth, fire or their combination, that demanded dedicated corporeal, emotional and spiritual labour, apprised in cumulative, singular experiential episodes.³⁸ In doing so, Palissy confronted and challenged the epistemic structure of natural history, because his individual affective production of the knowledge of matter resisted its work of systematization.

33 'contraint brusler les estapes qui soustenoyent les trailles de mon jardin, [...] les tables et plancher de la maison. [...] J'estois en une telle angoisse'. Ibidem 490.

34 'le desir que j'avois de parvenir à mon entreprinse me faisoit faire des choses que j'eusse estimé impossibles'. Ibidem 492.

35 'mes tristesses et douleurs furent augmentees si abondamment que je perdois toute countenance. Car combien que mes esmaux fussent bons et ma besongne bonne, neantmoins deux accidens estoient survenuz à laditte fournée, lesquels avoyent tout gasté'. Ibidem 492.

36 'me couchay de melancholie'. Ibidem 493.

37 Shell, "Casting Life" 39.

38 See similarly, the 'experiential' rather than 'observational' knowledge derived from trial and error in the academic medical discipline of *practica*, which Katharine Parks describes as having a '(by scholastic standards) shaky epistemic basis'. Park, "Observation in the Margins, 500-1500" 36.

2 Empathetic Contemplation as Hermeneutic Strategy

Through the corpus of his work, we learn that it is through his affective responses to a multisensory exploration of nature that Palissy produced his situated knowledge. Certainly he looked at the world around him ('I saw several times asps and snakes laying and coiled in the bottom of marsh water').³⁹ Even more so, Palissy *perceived* and *contemplated*. He witnessed, with humility, his head bowed; that is, he opened himself up to what God could teach him: 'I went about the fields my head lowered, to contemplate the works of nature'.⁴⁰ His spiritual contemplation of the world surrounding him was a complex and highly charged emotional response to textual knowledge, in which natural history, natural theology and personal devotion were critical elements. As he told his readers: 'I have no other book than the sky and the earth, which is known to us all, and is available for all to learn how to read this beautiful book'.⁴¹ Palissy's apprehension of the book of nature was a trope that would later become common to Protestant natural-historical discourse, developed strongly in seventeenth-century England.⁴² His natural-theological interpretation of nature, of a sort more fully expressed by later Protestants, was for Palissy a religious activity: he therefore understood his life's work as quasi-religious vocation.⁴³ But already, the trope of 'rustification,' as Danièle Duport has suggested, took sixteenth-century French Protestant agricultural and horticultural treatises such as those of Olivier de Serres in innovative directions.⁴⁴

39 'J'ay veu plusieurs fois des aspics et serpens, couchez et entortillez au fond des eaux desdites mares'. "Des Eaux et Fontaines" in Palissy, *Discours in Œuvres complètes* 262.

40 'je m'en allois par les champs la teste baissée, pour contempler les euvres de nature'. "Traité des Métaux et alchimie", Palissy, *Discours in Œuvres complètes* 345.

41 'Je n'ay point eu d'autre livre que le ciel et la terre, lequel est conneu de tous, et est donné à tous de connoistre à lire ce beau livre' in Palissy, "Des Pierres", *Discours; Œuvres complètes* 427.

42 See Brooke J.H., *Science and Religion. Some Historical Perspectives* (Cambridge: 1991); Harrison P., *The Bible, Protestantism, and the Rise of Natural Science* (Cambridge: 1998); Shapiro B.J., *A Culture of Fact. England, 1550-1720* (Ithaca: 2000); Mandelbrote S., "The Uses of Natural Theology in Seventeenth-Century England", *Science in Context* 20 (2007) 451-480; Mandelbrote S., "Early Modern Natural Theologies", in Brooke J.H. – Manning R. – Watts F. (eds.), *The Oxford Handbook to Natural Theology* (Oxford: 2013) 75-99.

43 See Harrison P., "The Cultural Authority of Natural History in Early Modern Europe", in Alexander D.R. – Numbers R.L. (eds.), *Biology and Ideology from Descartes to Dawkins* (Chicago: 2010) 15.

44 Duport D., "Jardiniers protestants en France au XVI^e siècle", in Dupèbe J. – Giaccone F. – Naya E. – Pouey-Mounou A. – P. (eds.), *Esculape et Dionysos: Mélanges offerts à Jean Céard* (Geneva: 2007) 833-46; Duport D., *Le Jardin et la nature: ordre et variété dans la littérature de la Renaissance* (Geneva: 2002) 89.

Palissy framed these revelations of nature's secrets as consequences of his willingness to be among nature, indeed *with* nature, his head bowed in an attitude of both close attention, but also imaginative, introspective investigation. Thus, while travelling in the countryside between Marennes and La Rochelle:

I perceived a new hollow pit, from which had been drawn more than one hundred cartloads of shells [...] from then on, I went on my walks with my head bowed, so as to see nothing that could prevent me from imagining what could be the cause of this [...] This was the reason from then on that made me imagine and fill my mind with some of the secrets of nature.⁴⁵

In his essay on stones, Palissy insisted upon the importance of his experiences over widely-held theoretical positions 'which taught me more philosophy than did Aristotle'. There he found knowledge that 'I cannot read in Aristotle and that I read perfectly in these marcasites and have understood thanks to them.'⁴⁶ Palissy suggested through his work how 'practice' was to be prioritized over 'theory,' using the two as protagonists in dialogue – a form, as Frank Lestringant has noted, that was commonly used for teaching the reformed catechism.⁴⁷ However, his attitude to scholarly works and texts was somewhat more complicated.

Natural-historical knowledge derived from book-based learning earned Palissy's avowed disdain:

some disciples of Paracelsus, and some other Alchemists have left books in study of which some have lost both their time and their goods. These pernicious books caused me to scratch the earth for the space of forty years, and to search its entrails, so as to know the things it produces.⁴⁸

45 'j'ay apperceu un fossé creusé de nouveau, duquel on avoit tiré plus de cent charretees de pierres, [...] et deslors je commençay à baisser la teste, le long de mon chemin, afin de ne voir rien, qui m'empeschast d'imaginer, qui pourroit estre la cause de cela [...] Voila la cause, qui depuis ce temps là, me fit imaginer et repaistre mon esprit de plusieurs secrets de nature'. Palissy, *Recepte* in *Œuvres complètes* 135-136.

46 'lesquelles m'ont instruit en la philosophie beaucoup plus que non pas Aristote: [...] que je ne puis lire en Aristote et j'ay bien leu ausdites marcassites et ay entendu par icelles'. Palissy, "Des Pierres" in *Œuvres complètes* 452.

47 Lestringant, "Le Prince et le Potier".

48 'et aucuns disciples de Paracelse, et plusieurs autres Alchimistes ont laissé des livres en l'estude desquels plusieurs ont perdu et leurs temps et leurs biens. Tels livres pernicioeux m'ont causé gratter la terre, l'espace de quarante ans, et fouiller les entrailles d'icelle, à fin

But Palissy's position constituted more than simply a form of false scholarly modesty or claim to artisanal novelty, for his emotional response to these books, his dissatisfaction with their answers, was crucial to his journey of discovery.⁴⁹ Firstly, he demonstrated a fair measure of scholarly knowledge that he had gained from texts, notably referencing a number of authors whose hermetic conceptualization of natural history perhaps matched his own sense of such knowledge as 'secret.' Secondly, his affective response to insufficiencies he found within such works drove him out to the fields – a move well documented in relation to the Renaissance rise of natural history. This shift was indeed common to a number of authors who sought to assert the validity of their experiences of nature alongside or in place of knowledge of texts (although Palissy's foregrounding of the affective dimensions of this process was more unusual).⁵⁰ Among them was Paracelsus, who received rather short shrift from Palissy.⁵¹ Finally, as the examples above suggest, even the presentation of his apprehension of nature operated within a textual paradigm, as Palissy claimed to 'read' quite literally the book of nature.

Palissy's capacity to perceive and appreciate the book of nature was a gift from God, a 'just thing before God and of great recreation to those who admirably want to contemplate the marvellous works of God.'⁵² It required appreciation for the bountiful splendour of nature that God had enabled him to discern; a discernment that he translated with missionary zeal into his ceramic practice, texts and lectures. Importantly, Palissy's contemplative natural knowledge – constituted as a spiritual act – was revealed in his works as empathetic attachment to nature. Indeed, Palissy was so sensitively disposed to nature that he could experience its cries and its joys. Observing the way in which woodcutters unsustainably lopped branches, Palissy lamented:

de connoistre les choses qu'elle produit dens soy'. "A treshaut et trespuissant sieur le sire Antoine de Ponts", *Discours in Œuvres complètes* 246-247.

49 For the standard views, Dupuy E., "Ses lectures", in *Bernard Palissy* 139-190; Thauré, "Bernard Palissy: Le Savant derrière le mythe", Fragonard, "Bernard Palissy: héritage de la science écrite", Fragonard, "Introduction", *Œuvres complètes* 11-46.

50 Ogilvie, "Travel and Natural History"; Ogilvie, *The Science of Describing*; Ogilvie, "La storia naturale tra libro ed esperienza".

51 Interestingly, Bono describes Paracelsus' similar rejection of book-based learning in strongly emotive language without discussing the affective dimensions of his stance. Bono, "The Two Books and Adamic Knowledge" 313.

52 'chose juste devant Dieu, et de grande récréation à ceux qui admirablement veulent contempler les oeuvres merveilleuses de Nature'. *Recepte in Œuvres complètes* 189.

The abuses that they commit every day to trees forces me to speak thus with affection [...] I am amazed that the wood does not cry at being so villainously mauled. Do you think that the trunk that has been thus split and ripped out in various places does not feel the division and exaction that is done to it?⁵³

Palissy demanded respect for nature and its benevolence, and was amazed 'that the earth and the things produced in it do not demand vengeance against these ignorant and ungrateful maulers who do nothing other than destroy and dissipate the trees and plants daily, without any consideration'.⁵⁴ He took pleasure in watching squirrels 'who rejoice as they take their meals and dine on walnuts'.⁵⁵ Disposed as was Palissy, one could perceive the emotional life of the natural world.

Nature was, for Palissy, a world imbued with feelings that those appropriately attuned could behold. He reflected of fruiting plants, 'nothing in nature produces its fruit without great effort, indeed, and pain'.⁵⁶ Grapevines that wrapped their leaves around budding fruit were 'careful to protect their fruit, like a woman her infant'.⁵⁷ Thus he interpreted the specific pattern of branch growth in trees in equally anthropomorphic terms:

I have perceived also how trees at the edge of the forest throw themselves out or incline themselves towards the edge of the lands, as if the other trees were their enemies.⁵⁸

Palissy's empathetic contemplation required not only respect for nature but a capacity to *feel with* the natural world. In doing so, one could derive appreciation of heavenly gifts on earth, and be brought closer to God.

53 'Les abus qu'ils commettent tous les jours és arbres, me contraignent en parler ainsi d'affection ... Je m'esmerveille que le bois ne crie d'estre ainsi vilainement meurtri. Penses-tu que la seppe qui est ainsi fendue et esclattee en plusieurs lieux, qu'elle ne se ressente de la fraction, et extorsion qui luy aura esté faicte?' Ibidem 121-122.

54 'que la terre et les natures produites en icelle ne crient vengeance contre certains meurtrisseurs, ignorans, et ingrats, qui, journellement ne font que gaster et dissiper les arbres et plantes, sans aucune consideration'. Ibidem 109.

55 'qui se resjouissoient, en prenant leur repas et disner sur lesdits Noyers'. Ibidem 193.

56 'nulle nature ne produit son fruit sans extreme travail, voire et douleur'. Ibidem 126.

57 'songneux de garder leurs fruits, comme la femme son petit enfant'. Ibidem 190.

58 'j'apperceu aussi que les arbres de la circonference de la forest se jettoient et courboyent ou s'enclinoient devers le costé des terres, comme si les autres arbres leur estoient ennemis'. 'Pour trouver et connoistre la Terre de Marne', *Discours in Œuvres complètes* 527.

In many ways, Palissy appeared to foreshadow ideas that were articulated more fully in the work of Francis Bacon. In his love of nature, Palissy evoked Lucretius and Virgil.⁵⁹ Palissy hoped to encourage a love of the earth in others, for such a love would produce manifold benefits:

if men had as great a zeal and were as fond of working the earth as they are fond of buying offices, profits, and honours, then the earth would be blessed and the toil of he who cultivated it.⁶⁰

Palissy's advocacy for the utility of sensitive technological applications in agriculture or forestry echoes what Peter Harrison terms the 'Calvinist conception of the sanctity of work' that was more fully articulated in Bacon's "'utilitarian" justifications for a new scientific programme.'⁶¹

Additionally, the young Bacon appears to have been in Paris in the very years that Palissy was presenting his lectures. Mark Stoll has noted 'the striking similarities between the *Discours admirables* and the famous inductive method and scientific program of *The Advancement of Learning*'.⁶² James J. Bono has characterized Bacon's view of nature, a voluntarist perspective, as the contingent product of God's will in which nature bore witness to His 'power, majesty and providence' rather than an interpretable access to God's mind which was 'beyond human comprehension and [...] thus unfathomable'.⁶³ What Palissy's

59 Dupuy, *Bernard Palissy* 264-265.

60 'que les hommes eussent aussi grand zele, et fussent aussi affectionnez au labeur de la terre, comme ils sont affectionnez pour acheter les offices, benefices, et grandeurs, et lors la terre serait benite, et le labeur de celuy qui la cultiveroit'. *Recepte in Œuvres complètes* 192.

61 Harrison P., *The Fall of Man and the Foundations of Science* (Cambridge: 2007) 63.

62 Stoll M., "'Sagacious' Bernard Palissy: Pinchot, Marsh, and the Connecticut Origins of American Conservation", *Environmental History* 16 (2011) 10 and 29, note 16. See also Hanschmann A.B., *Bernard Palissy der Künstler, Naturforscher und Schriftsteller, als Vater der induktiven Wissenschaftsmethode des Bacon von Verulam* (Leipzig: 1903); Allbutt T.C., "Palissy, Bacon, and the Revival of Natural Science", *Proceedings of the British Academy* vi (1913-1914) 223-247; Rossi P., *Francis Bacon: From Magic to Science*, trans. S. Rabinovitch, Routledge Library Editions: History and Philosophy of Science 26 (London: 1968) 8-9; Meer J.M. van der, "European Calvinists and the Study of Nature: Some Historical Patterns and Problems", in Brink G. van der (ed.), *Calvinism and the Making of the European Mind* (Leiden – Boston: 2014) 113. Perhaps with Palissy in mind, Bacon later reflected that 'occasionally, some unusually intelligent craftsman, seeking to achieve a reputation, devotes himself to making some new invention, usually at his own expense'. Bacon Francis, *The New Organon*, eds. L. Jardine – M. Silverthorne (Cambridge: 2000) Book 1, 81, 66.

63 Bono, "The Two Books and Adamic Knowledge" 311; Bono J.J., *The Word of God and the Languages of Man: Interpreting Nature in Early Modern Science and Medicine*, vol. 1: *Ficino to Descartes* (Madison: 1995).

contemplation of, and with, nature enabled him to discern were vibrant processes in nature – a set of perfect systems – that God had set in motion:

All the water that is in the world, has been and will be, was all created in one day; and, as the water, seed and metals of all minerals and all the stones have been created in one day; so it is with the earth, air and fire, as the sovereign creator has left nothing empty, and as he is perfect, he left nothing imperfect.⁶⁴

For Palissy, these marvellous systems worked in dynamic ways; each playing their part in a united whole, purposeful in a divine plan:

God did not create these things to leave them idle, thus each does its duty, according to the command given to it from God. The Stars and Planets are not idle, the sea travels from one side and the other, and is working to produce profitable things, the land is similarly never idle: what is consumed naturally in it is renewed and re-formed again, if not in one way, then in another.⁶⁵

Empathy with the natural world and devotion to God's plan enabled Palissy to discern the elegant structure that God had set to 'work, to engender, produce, come and go'.⁶⁶ As he described his practice, what Palissy perceived in the natural world was not the product of observation of the kind undertaken by his contemporary naturalist counterparts; it was, rather, *contemplation*; that is, a spiritual enactment of knowledge that combined natural history, natural theology and the zeal of the *dévot*.

64 'toutes les eaux qui sont au monde, qui ont esté et seront, furent toutes créées en un mesme jour; et, si ainsi est des eaux, les semences des metaux et de tous les mineraux & de toutes les pierres ont esté créées aussi en un mesme jour: autant en est il de la terre, de l'aër et du feu, car le souverain createur n'a rien laissé de vuide, et comme il est parfait, il n'a rien laissé d'imperfait'. Palissy, "Traité des Métaux et alchimie" in *Œuvres complètes* 328-329.

65 'Dieu ne crea pas ces choses pour les laisser oisifves, ains chacune fait son devoir, selon le commandement qui luy est donné de Dieu. Les Astres et Planetes ne sont pas oisifves, la mer se pourmeine d'un costé et d'autre, et se travaille à produire choses profitables, la terre semblablement n'est jamais oisifve: ce qui se consomme naturellement en elle, elle le renouvelle, et le reforme derechef, si ce n'est en une sorte, elle le refait en une autre'. Palissy, *Recepte* in *Œuvres complètes* 132.

66 'travailler à engendrer, produire, aller et venir'. Palissy, "Des Eaux et Fontaines" in *Œuvres complètes* 289.

3 Aesthetic Technologies: The Pleasure of Wonder and the Wonder of Truth

How could Palissy encourage others to join him on this path, the path effectively of a *dévot* who suffered for and with the natural world made by an all-powerful God? What technologies could provide the emotional response that would inspire people to share in his understanding? Palissy recounts that it was his immediate emotional response to a white enamel cup that had prompted him to start learning about the natural world. Emotions were pivotal to the production of his knowledge as new matter, spaces and objects – to their assemblage, display and reception.⁶⁷

Palissy's ceramic creations materialised his natural knowledge into devotional tools; their spiritual effectiveness relied on the viewer's aesthetic appreciation for his biomimetic craftsmanship, which displayed his intimate contemplation of precise detail in the natural world. Obtaining a uniform manufacture for his earthen materials was therefore crucial:

Having made a number of rustic basins & having fired them, some of my enamels turned out beautiful and well made, others badly made; others were burnt, because they were made of different materials that needed to be fired at different temperatures.⁶⁸

Once he could produce uniformity, Palissy was likewise challenged in developing colours that also reflected his apprehension of the natural world:

67 My thinking here is shaped by Ahmed S., *The Cultural Politics of Emotion* (New York: 2004); Miller D. (ed.), *Materiality* (Durham: 2005); Bennett J., *Vibrant Matter: A Political Ecology of Things* (Durham: 2010); Harris O.J.T. – Flohr Sørensen T., "Rethinking Emotion and Material Culture", *Archaeological Dialogues* 17, 2 (2010) 145-163; Coole D. – Frost S., *New Materialisms: Ontology, Agency, and Politics* (Durham: 2010); Vaujany F.X. de – Mitev N. (eds.), *Materiality and Space: Organizations, Artefacts and Practices* (Houndmills: 2013).

68 'Ayant fait un certain nombre de bassins rustiques et les ayant fait cuire, mes esmaux se trouvoient les uns beaux et bien fondus, autres mal fondus, autres estoient brulez, à cause qu'ils estoient composez de diverses matières qui estoient fusibles à divers degrez'. Palissy, "De l'Art de terre" in *Œuvres complètes* 494.

the green of the lizards was burned before the colour of the snakes had melted, also the colour of the snakes, crayfish, turtles and crabs was melted before the white had received any beauty. All these faults caused me such toil and sorrow of mind.⁶⁹

Colours were critical for Palissy because they were a component of his practical knowledge and of its reception by others.⁷⁰ This was not a struggle for mastery over manufacture for solely aesthetic or technical achievement, as has been discussed to date, but because truth, for Palissy, could be revealed and apprised through beauty. They were connected aspects of perception, experienced through the emotions.

In the same way, Palissy's grotto constructions can be considered not only as places of pleasure but as sites to create and communicate knowledge. As Pamela H. Smith has argued, grottoes generally were seen to be 'an attempt to mimic the generative forces of nature'.⁷¹ Palissy described the 'rustic grotto' that he was creating for Anne de Montmorency in his 1563 *Architecture et ordonnance de la grotte rustique*. In that work, Palissy allows one of his interlocutors to describe the precise attention to biomimetic detail:

the worker has used such effort that there is no wrinkle nor scale that is not observed in the sculpture. As to the foliage, I can assure you it is the same, the worker has left out nothing, he has sculpted precisely what nature has taught him, or makes apparent on the exterior. It is even down to the little nerves, arteries, and tiny veins, which are spread across the leaves, however small they are the worker has observed them in his sculpture.⁷²

69 'Le verd des lezards estoit bruslé premier que la couleur des serpens fut fondue, aussi la couleur des serpens, escrevices, tortues et cancre, estoit fondue au paravant que le blanc eut reçu aucune beauté. Toutes ces fautes m'ont causé un tel labeur & tristesse d'esprit'. Ibidem 494-495.

70 See Shell, in particular the section "Nature's Coloring Book" in "Casting Life" 20-24.

71 Smith, *The Body of the Artisan* 101. See also Miller N., "Domain of Illusion: The Grotto in France", in Macdougall E. (ed.), *Fons Sapientiae: Renaissance Garden Fountains* (Washington, D.C.: 1978) 175-205.

72 'l'ouvrier a usé de telle industrie qu'il n'y a ride, touche ny escaille, qu'il ne soit observée en ladite insculpture. Quant est des herbes je te peux assurer en cas pareil, que l'ouvrier n'a rien laissé, qu'il n'ayt insculpté jouxte ce que le naturel luy a enseigné, ou fait apparostre à l'exterieur. Il n'y a pas jusques aux petis nerfs, arteres, et petites costes, qui sont esparses dedans les feuilles, quelque petitesse qu'elles ayent que l'ouvrier n'ayt observé en sa insculpture'. Palissy, *Architecture et ordonnance de la grotte rustique de Monseigneur le duc de Montmorency* (La Rochelle, Barthélemy Berton: 1563) in *Œuvres complètes* 68.

Interestingly, Palissy's use of the verb 'to observe' in this passage did not relate to the emerging natural-historical practice of observation in the field, but rather to the process by which his *contemplation* of the natural world was then instantiated in matter, his ceramic sculpture.⁷³ This observation was, in his view, a manifestation in matter of God's gift of perception and empathy for nature. The grotto, with its own source of running water manipulating the visitor's senses, rendered spatially and materially a truth revealed to Palissy by God that was to be experienced affectively, in wonder and awe, by its visitors.⁷⁴ 'This grotto left me completely stunned,' says one interlocutor in the *Architecture*, and of its figures: 'no one could not be astonished to see them, ... but you will understand better the beauty when I tell you more about it'.⁷⁵ As Catharine Randall has argued of what she terms these 'entexted' structures, Palissy's 'text functions as an entryway for the reader to the structure of faith'.⁷⁶ Palissy constructed a space in which the visitor could contemplate the revelations that he had experienced in real world space – the grotto was thus a distillation, a literal condensation of knowledge drip-fed to receptive participants via its cold and damp walls.

Aesthetic qualities were also foregrounded as vital components of Palissy's other ceramic works. A large dish, perhaps like the rustic dish in the form of a pod now held at the Musée de Beaux-Arts in Lyon, is described in equally glowing terms in his 1563 *Recepte veritable par laquelle tous les hommes de la France pourront apprendre à multiplier et augmenter leurs thresors*.⁷⁷ Palissy recalls that

the late King Henri, and the Cardinal of Lorraine attested ... that they had seen greater works and more beautiful things in all the world, but they had never seen anything like my work.⁷⁸

73 See especially Park and Pomata on the development of scholarly observational practices in Daston – Lünbeck (eds.), *Histories of Scientific Observation*.

74 For theorisations of emotions in space, see Reckwitz A., "Affective Spaces: a Praxeological Outlook", *Rethinking History* 16 (2012) 241-258.

75 'Laquelle grotte m'a rendu tout esbahy [...] il n'y a homme qui ne fust estonné de les veoir [...] Mais tu entendras mieulx la beaulté quand je t'auray discoursu le surplus'. Palissy, *Architecture in Œuvres complètes* 62, 63, 64.

76 Randall, "Structuring Protestant Scriptural Space" 343. On the literary and spiritual references of his garden, see also Polizzi G., "L'Intégration du modèle: le Poliphile et le discours du jardin dans le *Recepte Veritable*", and Lestringant, "L'Eden et les ténèbres extérieures", in *Actes du Colloque Bernard Palissy, 1510-1590* 65-92 and 119-130; Amico, *Bernard Palissy*.

77 "Large 'rustic' dish in the form of a pod, End of the 16th Century, Terra cotta with high-fire, lead-containing glaze, 75.5 × 45.5; height 13.8cm". Musée de Beaux-Arts, Lyon. Inv. Nr 175.

78 'le feu Roy Henri, & monsieur le Cardinal de Lorraine attestarent ... qu'ils avoient veu des plus grands oeuvres, et des plus belles choses au monde, mais qu'il n'avoient jamais veu oeuvre semblable au mien'. Palissy, "A Monseigneur le duc de Montmorancy", *Architecture in Œuvres complètes* 53.

What the king found striking was of course at one level what Palissy had produced *as matter*, but what he had created was simply, he argued, what God had opened his eyes to contemplate through feeling *about* matter. The Lyon dish, one of the few that can be firmly attributed to Palissy, shaped as a life-giving seed pod, offers Palissy's intimate revelation of nature to a wider audience, primarily, it seems, a courtly circle of patrons of the arts.⁷⁹ It was a didactic technology – as were his publications and lectures – that combined reptiles, fish and crustaceans across the dish on the moss-covered rocks and ferns, symmetrically locating the elements of nature in symbolic balance.⁸⁰ Palissy believed 'the abundance of the sea was greater than that of the earth, and that without comparison it produced more fruit'.⁸¹ Filling the dish with water produced a further dynamism to the work, the viewer using the generative properties of water to set the natural world to be found in the pod-shaped cradle in motion, permitting a concrete visualization and contemplation of the process by which God had set in motion the natural world. Materialising his ideas in this form, Palissy gave recipients quite literally the seeds for understanding divine nature.

Significantly, the beauty of nature was rendered as biomimetic creation through cast modelling techniques that Palissy developed. Feeling with nature was thus a sensory as well as emotional process.⁸² Among the remains of his Tuileries workshops have been found casts of vipers, grass snakes, frogs, tortoises and lizards as well as a complete cast of a large wasp.⁸³ And, even in creating his renderings of nature from life casts Palissy was considering the emotions of his animal subjects. In the cabinets attached to his imaginary garden, Palissy wanted fauna to find itself at home among his creations. He hoped 'other lizards and snakes in nature will come often to admire them'.⁸⁴ Admiration for the material and spatial productions that God had enabled did

79 A plaster mould in the shape of a pod was found among the remains of Palissy's workshop. Inv piece 24087. *Bernard Palissy. Mythe et réalité* 83.

80 See Poulain, "Les rustiques figulines".

81 'la luxure de la mer, estoit plus grande, que celle de la terre, et que sans comparaison, elle produit plus de fruit'. Palissy, *Recepte* in *Œuvres complètes* 226.

82 Shell, "Casting Life" 37: 'His ceramic wares, as well as his exhibit scenarios, exemplify a model for learning through sensing – as well as knowing through making – in three dimensions.'

83 See *Bernard Palissy. Mythe et réalité* 90–91. See also Smith P.H. – Beentjes T., "Nature and Art, Making and Knowing: Reconstructing Sixteenth-Century Life Casting Techniques", *Renaissance Quarterly* 63 (2010) 128–179 and Smith, "Between Nature and Art: Casting from Life in Sixteenth-Century Europe", in Hallam E. – Ingold T. (eds.), *Making and Growing: Anthropological Studies of Organisms and Artefacts* (Aldershot: 2014) 45–63.

84 'les autres lizers naturels et serpents, les viendront souvent admirer'. Palissy, *Recepte* in *Œuvres complètes* 169.

not begin and end with Palissy's wealthy patrons but extended to wonder from the very fauna that his works represented.

The striking appearance of these ceramic works materializing knowledge and rendering it emotionally compelling for their viewers, was an integral aspect of Palissy's didactic mission. It was a multisensory engagement with:

all the beauty of the garden [...] they will see entirely all the beauty of the garden, and what happens there: Also they will have the scent of cowslips, violets, marjoram, basil and other such species of herbs [...] planted in earthenware vases enamelled in different colours [...] [that] will greatly decorate and adorn the beauty of the garden and gallery.⁸⁵

Through vibrant forms that stimulated the viewers' senses, souls and their intellect, Palissy's work aimed to reveal the divine truth of God's power over the natural world that he had set into motion. 'When I contemplate the different works and beautiful order that God has placed on earth, I am completely amazed at the pride of men.'⁸⁶

4 Conclusions: Alone with Nature

His practice cannot be considered as conventional natural history. Palissy, the ceramic artisan, did not participate in the contemporary scholarly community of his time as a result of his occupational status and his confession, but also of his practices. His knowledge was not produced through technologies and practices of systematic observation common to contemporary naturalists. Instead he contemplated God's power in nature through an affective and sensory framework of cumulative experiences and technologies of matter, a practice that limited its interaction with his naturalist counterparts and that resisted integration with the epistemology of his time. Palissy's explicitly articulated emotional states have been hiding in plain sight, often reproduced by scholars without comment on their possible epistemological significance.

85 'toute la beauté du jardin [...] ils verront entierement toute la beauté du jardin, et ce que s'y fera: Aussi ils auront la senteur de certains damas, violettes, marjolaines, basilics, et autres telles especes d'herbes [...] plantees dedans certains vases de terre, esmaillez de diverse couleurs, [...] [qui] decoreront et orneront grandement la beauté du jardin et galerie'. Ibidem 180.

86 'Quand j'ay contemplé les diverses euvres et le bel ordre que Dieu a mis en la terre, je me suis tout esmerveillé de l'outrecuidance des hommes'. "Traité des Métaux et alchimie", Palissy, *Discours in Œuvres complètes* 341-342.

Bibliography

- Ahmed S., *The Cultural Politics of Emotion* (New York: 2004).
- Allbutt T.C., "Palissy, Bacon, and the Revival of Natural Science", *Proceedings of the British Academy* VI (1913-1914) 223-247.
- Amico L.N., "Les Céramiques authentiques de Bernard Palissy", *Revue de l'art* 78 (1987) 61-66.
- Amico L.N., *Bernard Palissy. In Search of Earthly Paradise* (Paris: 1996).
- Bacon Francis, *The New Organon*, eds. L. Jardine – M. Silverthorne (Cambridge: 2000).
- Barad K., "Posthuman Performativity: Towards an Understanding of How Matter Comes to Matter", *Signs: Journal of Women in Culture and Society* 28 (2003) 801-831.
- Barad K., *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter* (Durham, NC: 2007).
- Bennett J., *Vibrant Matter: A Political Ecology of Things* (Durham: 2010).
- Bono J.J., *The Word of God and the Languages of Man: Interpreting Nature in Early Modern Science and Medicine*, vol. 1: *Ficino to Descartes* (Madison: 1995).
- Bono J.J., "The Two Books and Adamic Knowledge: Reading the Book of Nature and Early Modern Strategies for Repairing the Effects of the Fall and of Babel", in Mandelbrote, S. – van der Meer, J.M. (eds.), *Nature and Scripture in the Abrahamic Religions: Up to 1700*, vol. 1, Brill's Series in Church History 37 (Leiden – Boston: 2008) 317-325.
- Brooke J.H., *Science and Religion. Some Historical Perspectives* (Cambridge: 1991).
- Broomhall S. (ed.), *Ordering Emotions in Europe, 1100-1700* (Leiden – Boston: 2015).
- Coole D – Frost S., *New Materialisms: Ontology, Agency, and Politics* (Durham: 2010).
- Crepin-Leblond T. (ed.), *Une orfèvrerie de terre. Bernard Palissy et la céramique de Saint-Porchaire, exposition du Musée national de la Renaissance, Château d'Ecouen, 24 septembre 1997-12 janvier 1998* (Paris: 1997).
- Daston L. – Lünbeck E. (eds), *Histories of Scientific Observation* (Chicago: 2011).
- Dupuy E., *Bernard Palissy, l'homme, l'artiste, le savant, l'écrivain* (Paris: 1902; Geneva: 1970).
- Dufay B. – Kisch Y. de – Poulain D. – Roumegoux Y. – Trombetta P.J., "L'Atelier parisien de Bernard Palissy", *Revue de l'art* 78 (1987) 35-60.
- Duhem P. "Léonard de Vinci, Cardan et Bernard Palissy", *Bulletin Italien* 6 (1906) 289-320.
- Duport, D., "Jardiniers protestants en France au XVI^e siècle", in Dupèbe J. – Giaccone F. – Naya E. – Pouey-Mounou A.-P. (eds.) *Esculape et Dionysos: Mélanges offerts à Jean Céard* (Geneva: 2007) 833-846.
- Duport D., *Le Jardin et la nature: ordre et variété dans la littérature de la Renaissance* (Geneva: 2002).

- Findlen P. "The Formation of a Scientific Community: Natural History in Sixteenth-Century Italy", in Grafton A. – Siraisi N. (eds.), *Natural Particulars: Nature and the Disciplines in Renaissance Europe* (Cambridge, Mass.: 1999) 369-400.
- Findlen P., "Natural History", in Park K. – Daston L. (eds.), *The Cambridge History of Science*, vol. 3: *Early Modern Science*, 5 vols. (Cambridge: 2006) 435-468.
- Fragonard M.-M., "Bernard Palissy: héritage de la science écrite et transmission des connaissances techniques", in Roig Miranda M. (ed.), *La Transmission du savoir dans l'Europe des XVI^e et XVII^e siècles* (Paris: 2000) 27-42.
- Hanschmann A.B., *Bernard Palissy der Künstler, Naturforscher und Schriftsteller, als Vater der induktiven Wissenschaftsmethode des Bacon von Verulam* (Leipzig: 1903).
- Harris O.J.T. – Flohr Sørensen T., "Rethinking Emotion and Material Culture", *Archaeological Dialogues* 17 (2010) 145-163.
- Harrison P., *The Bible, Protestantism, and the Rise of Natural Science* (Cambridge: 1998)
- Harrison P., *The Fall of Man and the Foundations of Science* (Cambridge: 2007).
- Harrison P., "The Cultural Authority of Natural History in Early Modern Europe", in Alexander D.R. – Numbers R.L. (eds.), *Biology and Ideology from Descartes to Dawkins* (Chicago: 2010) 11-35; 357-364.
- Harrison P., "Natural History", in Harrison P. – Numbers R.L. – Shank M.H. (eds.), *Wrestling with Nature: From Omens to Science* (Chicago: 2011) 117-148.
- Kemp M., "Palissy's Philosophical Pots: Ceramics, Grottoes and the Matrice of the Earth", in Tega W. (ed.), *Le origini della modernità*, vol. 2: *Linguaggi e saperi nel XVII secolo*, 2 vols. (Milan: 1999) 72-78.
- Kemp M., *Visualizations: The Nature Book of Art and Science* (Berkeley: 2000).
- Knorr Cetina K., *Epistemic Cultures: How the Sciences Make Knowledge* (Cambridge, Mass.: 1999).
- Latour B., *Science in Action: How to Follow Scientists and Engineers Through Society* (Cambridge, Mass.: 1987).
- Latour B – Woolgar S., *Laboratory Life: The Construction of Scientific Facts* (Princeton: 1979).
- Lestringant F. (ed.), *Actes du Colloque Bernard Palissy, 1510-1590: L'Écrivain, le réformé, le céramiste: journées d'études 29 et 30 juin, 1990, Saintes – Abbaye-aux-Dames* (Mont-de-Marsan-Niort: 1992).
- Mandelbrote S., "The Uses of Natural Theology in Seventeenth-Century England", *Science in Context* 20 (2007) 451-480.
- Mandelbrote S., "Early Modern Natural Theologies", in Brooke J.H. – Re Manning R. – Watts F. (eds.), *The Oxford Handbook to Natural Theology* (Oxford: 2013) 75-99.
- Meer J.M. van der, "European Calvinists and the Study of Nature: Some Historical Patterns and Problems", in Brink, G. van den (ed.), *Calvinism and the Making of the European Mind* (Leiden: 2014) 103-130.

- Miller D. (ed.), *Materiality* (Durham: 2005).
- Miller N., "Domain of Illusion: The Grotto in France", in MacDougall E. (ed.), *Fons Sapientiae: Renaissance Garden Fountains* (Washington, D.C.: 1978) 175-205.
- Ogilvie B.W., "Travel and Natural History in the Sixteenth Century", in Ogilvie B.W. – te Heesen A. – Gierl M. (eds.), *Sammeln in der Frühen Neuzeit*, Max-Planck-Institut für Wissenschaftsgeschichte Preprint No. 50 (Berlin: 1996) 3-28.
- Ogilvie B.W., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2006).
- Ogilvie B.W., "La Storia naturale tra libro ed esperienza", in Clericuzio A. – Ernst G. (eds.), *Il Rinascimento italiano e l'Europa*, vol. 5: *Le scienze* 6 vols. (Vicenza: 2008) 163-178.
- Palissy, Bernard. *Mythe et réalité. Catalogue d'exposition Palissy à Saintes* (Niort – Agen: 1990) 56-67.
- Palissy Bernard, *Œuvres complètes*, eds. K. Cameron – J. Céard – M.-M. Fragonard – M.-D. Legrand – F. Lestringant – G. Schrenk (Paris: 2010).
- Perrin I., *Les Techniques céramiques de Bernard Palissy*, 2 vols. (Paris: 2000).
- Poulain D., "Les Rustiques figulines du Musée des Beaux-Arts de Lyon", *Bulletin des musées et monuments lyonnais* 3-4 (1993) 24-27.
- Reckwitz A., "Affective Spaces: a Praxeological Outlook", *Rethinking History* 16 (2012) 241-258.
- Rossi, P. *Francis Bacon: From Magic to Science*, trans. S. Rabinovitch (London: 1968).
- Shapiro B.J., *A Culture of Fact. England, 1550-1720* (Ithaca: 2000).
- Shell, H.R., "Casting Life, Recasting Experience: Bernard Palissy's Occupation between Maker and Nature", *Configurations* 12 (2004) 1-40.
- Smith P.H., "Giving Voice to the Hands: the Articulation of Material Literacy in the Sixteenth Century", in Trimbur J. (ed.), *Popular Literacy: Studies in Cultural Practices and Poetics* (Pittsburgh: 2001) 74-93.
- Smith P.H., *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago: 2004).
- Smith P.H., "The History of Science as a Cultural History of the Material World", in Miller P.N. (ed.), *Cultural Histories of the Material World* (Ann Arbor: 2013) 210-225.
- Smith P.H., "Between Nature and Art: Casting from Life in Sixteenth-Century Europe", in Hallam E. – Ingold T. (eds.), *Making and Growing: Anthropological Studies of Organisms and Artefacts* (Aldershot: 2014) 45-63.
- Smith P.H. – Beentjes T., "Nature and Art, Making and Knowing: Reconstructing Sixteenth-Century Life Casting Techniques", *Renaissance Quarterly* 63 (2010) 128-179.
- Stoll M., "'Sagacious' Bernard Palissy: Pinchot, Marsh, and the Connecticut Origins of American Conservation", *Environmental History* 16 (2011) 4-37.
- Sur les pas de Palissy: exposition d'œuvres de céramistes du XVI^e siècle à nos jours. 6 avril au 7 juillet 1990* (Paris: 1990).

- Thaure M., "Bernard Palissy: Le Savant derrière le mythe", in Dhombres J.G. (ed.), *Aventures scientifiques: savants en Poitou-Charentes du XVI^e au XX^e siècle* (Poitiers: 1995) 160-171.
- Thorndike L., *A History of Magic and Experimental Science*, vol. 5: *The Sixteenth Century*, 14 vols. (New York: 1941).
- Vaujany F.X. de – Mitev N. (eds.), *Materiality and Space: Organizations, Artefacts and Practices* (Houndmills: 2013).

L'idée d'un oiseau : l'oiseau de paradis ou la fabrication d'une merveille (xvi^e et xvii^e siècles)

Arlette Fruet

1 Introduction

La description de l'oiseau de paradis dans les histoires naturelles savantes [Fig. 4.1] ainsi que dans leurs emblématisations à la Renaissance est un véritable cas d'école pour appréhender la merveille en histoire naturelle comme construction tant épistémologique que littéraire¹.

Épistémologique, d'abord : bon nombre des caractéristiques surprenantes de l'oiseau sont en accord implicite avec la philosophie naturelle de la période ainsi qu'avec l'histoire naturelle proto-fonctionnaliste d'Aristote. Si la morphologie des animaux – l'étude des parties telle qu'elle est décrite dans *Les Parties des animaux* et *L'Histoire des animaux* aristotéliennes – ainsi que les mœurs des animaux rendent compte de leur adaptation au milieu, les traits étonnants qui caractérisent l'oiseau de paradis font sens lorsqu'on l'inscrit dans le cadre d'une physique élémentaire qualitative : il est, par excellence, l'habitant de la partie supérieure de l'air.

Cette représentation résiste à l'observation de l'oiseau – voire, de manière plus complexe encore, cette représentation crée un horizon d'attente qui déforme et informe le récit d'observation *in situ* des voyageurs, ainsi que le regard des collectionneurs européens à qui l'on fait parvenir des spécimens modifiés qui répondent à cette attente. L'oiseau de paradis comme merveille est donc aussi une construction poétique visant au maintien et à la diffusion d'une fiction plaisante, exemplaire par son exotisme et par son statut de paradigme

1 Pour l'histoire naturelle savante, voir Aldrovandi Ulisse, *Ornithologiae hoc est de avibus historiae libri XII* (Bologne, Franciscus de Franciscis Senensis : 1599) 806-816, Gessner Conrad, *Historia animalium libri III qui est de avium natura* (Zurich, Christopher Froschauer : 1555) 611-614, Belon du Mans Pierre, *Histoire de la nature des oyseaux* (Paris, Guillaume Cavellat : 1555) 79 ; pour l'emblématique, voir Sambucus Johannes, *Emblemata* (Antwerp, Christoph Plantin : 1564) 132, Camerarius le Jeune Joachim, *Symbolorum et emblematum ex volatilibus et insectis desumptorum centuria tertia collecta* (Nuremberg, Paulus Kaufman : 1596) fol. 43r-v.

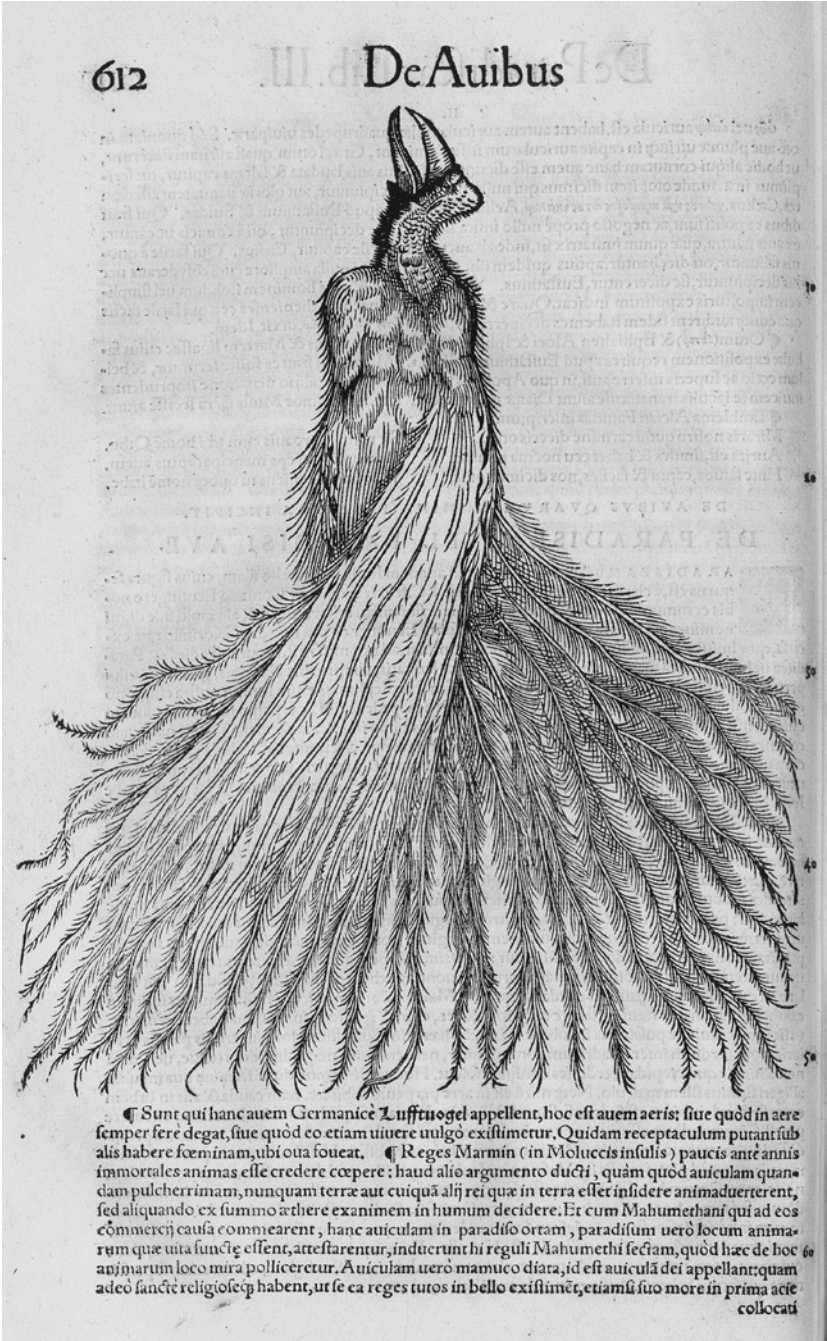


FIGURE 4.1 Paradisea vel paradisi avis. Gessner Conrad, *Historiae animalium liber III., qui est de avium natura* (Zürich, Christoph Froschauer: 1555) 612. BIU Santé, Paris

physique². Cette fiction est aussi une fabrication, un trucage des spécimens qui répond à une demande et à un marché économique de la curiosité : la merveille s'avère, sur le plan économique, une excellente affaire.

L'analyse ci-dessous propose une topique de l'oiseau de paradis comme merveille, telle qu'on la trouve en particulier dans les relations de voyage du seizième et dix-septième siècles, ainsi que dans les textes d'autres genres – dictionnaires, novellas etc. – qui diffusent les anecdotes de leurs découvertes³. On y retrouve la description des parties, des mœurs (reproduction et alimentation), enfin une histoire du nom.

2 Premières mentions

Au XVI^e et au XVII^e siècles, l'oiseau a été souvent perçu comme une émanation de l'air pur, de Cardan à Gassendi. Gassendi, qui voulait que soit accordée à l'imagination une place aussi importante que celle reconnue à la raison, discernait dans le vol des oiseaux l'effet prééminent d'un fluide subtil. [...] Si l'oiseau vole, c'est parce qu'il participe à un air léger⁴.

Ainsi, pour toute une époque, l'oiseau appartient à un règne supérieur, et son mode de vie est compris et interprété comme celui d'un être céleste. Nombreux sont les récits de voyage qui évoquent des oiseaux qui ne viennent jamais à terre et par conséquent n'ont pas forcément de pattes, puisqu'ils n'en ont pas l'usage, ne nidifient ni dans les arbres ni au sol, mais dans l'air pur, lumineux et chaud qui constitue leur unique lieu de vie. En octobre 1519 par exemple, Antonio Pigafetta, qui relate le voyage de Magellan, dit qu'il a vu, pendant la traversée vers le Brésil, un oiseau dont la femelle pond ses œufs sur le dos du mâle, et c'est là qu'ils vont éclore. Il assure que cet oiseau n'a pas de pattes et vit toujours en mer⁵. En arrivant en Inde en 1609, Jean Mocquet

2 La récurrence de l'oiseau de paradis comme motif dans la peinture rend également compte de cette poétique de la merveille. Visuellement saisissant, l'oiseau offre de nouvelles possibilités symboliques à l'iconologie de la période. Voir Marcaïda J.R., "Rubens and the Bird of Paradise. Painting Natural Knowledge in the Early Seventeenth Century", *Renaissance Studies* 28, 1 (2014) 112-127.

3 Voir aussi Huigen S., "Birds of Paradise and Sea People. Animals as a Rhetorical Construct in François Valentyn's Natural History of Amboina", *Tijdschrift voor geschiedenis* 125, 4 (2012) 504-519.

4 Bachelard G., *L'Air et les songes. Essai sur l'imagination du mouvement* (Paris : 1992) 94. Concernant l'oiseau de paradis, voir Gassendi Pierre, *Opera omnia*, éd. Nicolao Averanio, 6 vols. (Florence, Typus regiae celsitudinis : 1727), 11, 176.

5 Pigafetta Antonio et alii, *Le Voyage de Magellan : la relation d'Antonio Pigafetta et autres témoignages (1519-1522)*, éd. X. Xavier de Castro – J. Hamon – L.F. Thomaz (Paris : 2010).

rapporte l'exemple d'un petit oiseau qu'un matelot lui a montré, qui ne se pose jamais, se reproduit dans les couches les plus élevées de l'élément de l'air et dont les œufs légers, ballottés et couvés par l'air chaud, éclosent avant d'avoir atteint la surface de l'eau⁶. En 1671, le R.P. Navarrete, naviguant dans les parages de Madagascar, voit la mer couverte d'œies marines, dont on lui explique qu'elles n'ont pas de pattes mais seulement des ailes pour voler⁷. On pourrait multiplier les exemples.

D'une manière générale, l'oiseau constitue en soi une merveille de la nature. À l'époque des Découvertes, les bateaux inconnus que l'on aperçoit en mer ont été pris assez régulièrement, au début, pour des oiseaux prodigieux. En 1444, les Guinéens ont pensé que la caravelle portugaise qu'ils apercevaient pour la première fois pouvait être un oiseau qui courait sur la mer⁸, mais les Portugais eux-mêmes avaient également pris pour des oiseaux, en 1443, les embarcations sur lesquelles naviguaient les indigènes de la côte d'Afrique :

Et parce que c'était une chose dont ils avaient si peu l'idée, les nôtres, en les voyant de loin, pensèrent que ce pouvait être des oiseaux qui allaient de la sorte et, bien que leur taille fût anormale, ils pensèrent qu'il pouvait y en avoir de tels en cette région dont on contait de bien plus grandes merveilles⁹.

C'est dans ce contexte que l'oiseau de Paradis, originaire de Nouvelle Guinée, des îles environnantes et des Moluques, est découvert par les Européens. Sa représentation dans les récits de voyage anciens est d'abord le résultat d'une surprenante alchimie entre des données culturelles et religieuses et des témoignages qui apportent régulièrement des précisions nouvelles, sans que cessent de circuler pour autant les fictions qui avaient d'abord séduit. De surcroît, les discordances répétées préservent – voire amplifient – l'aura mystérieuse qui entoure le paradisiaire, souvent perçu par les voyageurs comme la quintessence de l'oiseau, comme un 'sublimé' d'oiseau.

6 Mocquet Jean, *Voyage à Mozambique et Goa, La relation de Jean Mocquet (1607-1610)*, ed. X. de Castro (Paris : 1996) 91.

7 Grandidier A. et G. (éds.), "Relâche du R.P. Navarrete à l'île Mascareigne et à Madagascar", *Collection des ouvrages anciens concernant Madagascar*, Comité de Madagascar (Paris : 1905), vol. III, 357.

8 Zuraga Gomes Eanes de, *Chronique de Guinée (1453)*, trad. L. Bourdon (Paris : 2011) 168.

9 Ibidem 124.

3 Des parties de l'oiseau de paradis

Son apparence extérieure l'a désigné d'emblée comme merveille :

Les récits de voyage mentionnent toujours le plumage, qui a étonné les premiers voyageurs. En décembre 1521, Pigafetta décrit 'de grands plumails de plumes longues de diverses couleurs [...]'¹⁰. En 1552, l'historien Lopez de Gomara mentionne un plumage 'd'une couleur singulièrement belle, [...], les plumes si joliment colorées qu'il n'est possible de plus'¹¹. Selon Linschoten en 1610, si l'oiseau de paradis porte ce nom, c'est 'à raison de la beauté de [ses] plumes surpassantes en lustre et beauté celles des autres oiseaux'¹². Le dictionnaire de Furetière en 1690 dit que 'le corps consiste presque tout en plumes. Celles de la tête ressemblent à de l'or pur'¹³. Tous évoquent également une queue aérienne, dont les pennes, d'une longueur et d'une délicatesse vaporeuses, ont fini par valider l'idée que le corps de l'oiseau n'avait pas réellement de chair, – '[...] moins de chair que le corps ne le démontre' écrit Lopez de Gomara – que son corps était constitué exclusivement de plumes d'une finesse et d'une légèreté jusque-là inconnues. Par voie de conséquence semble-t-il, Gomara insiste à deux reprises sur la capacité des oiseaux morts à échapper aux lois habituelles de la nature : 'ils ne se corrompent ni ne pourrissent aucunement. [...] Mais quoi qu'il en soit, il est pour le moins certain qu'ils ne se corrompent aucunement'¹⁴, ce qui les crédite d'une sorte de 'corps glorieux', de la même nature que l'éther auquel ils appartiennent.

L'absolue légèreté apparaît en effet comme l'une des données topiques incontournables de la description. Elle induit une perception inattendue de l'oiseau : puisqu'il est si extraordinairement léger, il n'a pas besoin d'ailes, le vent suffira pour le porter. Dans le récit qu'il fait de son voyage au secrétaire du pape Gian Francesco Poggio Bracciolini en 1439, Nicolo de Conti rapporte avoir vu

10 Pigafetta, *Le Voyage de Magellan (1519-1522)*, *La relation d'Antonio Pigafetta et autres témoignages* 225.

11 Gomara Lopez de, *Histoire générale des Indes Occidentales* [...], trad. Martin Fumée (Paris, Michel Sonnius : 1584) 284b-285.

12 Linschoten Jan Huygen van, *Histoire de la navigation de Jean Hugues de Linscot Hollandais* [...], (Amsterdam, Henry Laurent : 1610) 46.

13 Furetière Antoine, entrée "Manucodiata", *Dictionnaire universel* (La Haye – Rotterdam, Arnoud et Reinier Leers : 1701).

14 Gomara, *Histoire générale des Indes Occidentales* 285.

un oiseau de paradis à Bornéo. Il le présente encore comme un oiseau 'qui ressemble à une colombe, avec des plumes légères et une longue queue'¹⁵. Mais en décembre 1521, Pigafetta, qui décrit deux oiseaux morts que le roi de Bacchian aux Moluques envoie au roi d'Espagne, assure que 'ils n'ont point d'ailes, [...] et jamais ils ne volent si ce n'est quand il fait du vent'¹⁶. Lopez de Gomara entérine cette croyance en 1552 : 'Ils n'ont point d'ailes, aussi ne volent-ils point, mais sont portés par l'air étant légers [...]'¹⁷, et au cinquième jour de *La Semaine*, publiée en 1578, le poète Du Bartas en vient à écrire de ces oiseaux merveilleux dont le déplacement dans les airs n'obéit plus à aucune loi connue qu' 'ils volent sans voler', formulation étrange qui reflète la difficulté à décrire et classer la merveille¹⁸. Linschoten rappelle également cette conviction surprenante en 1610, confirmant que l'oiseau de paradis n'a pas d'ailes, 'ains seulement la tête et le corps avec une fort longue queue, comme on peut voir de ceux qu'on apporte par deçà'¹⁹. Dans la classe des oiseaux, le paradisier est donc suffisamment prodigieux pour pouvoir perdre sans conséquence ce qui est l'attribut même de l'oiseau, ses ailes, et se mouvoir, au sens propre, avec la même légèreté qu'une plume au vent.

Aussi les oiseaux de Paradis sont-ils perçus comme des êtres purement célestes, dont toute l'existence se déroulerait exclusivement dans les airs. En 1515, Tomé Pires rapporte la rumeur qui court aux îles d'Aru, à l'est de Banda : 'On dit qu'ils viennent du ciel et qu'on ne trouve pas leur origine'²⁰. Le secrétaire de Charles Quint, Transylvanus, qui obtint en 1522 d'El Cano, l'un des survivants de l'expédition Magellan, un exemplaire naturalisé, en parle comme d' 'un très beau petit oiseau qui ne se posait jamais sur la terre, ni sur quoi que ce fût sur la terre, mais qui parfois tombait du ciel, sans vie, sur le sol'²¹. En essayant d'établir en 1552 une sorte de fiche rassemblant toutes les informations connues sur les oiseaux de Paradis, Lopez de Gomara reconnaît qu' 'on ne sait d'où ils sortent, ni où ils s'élèvent [...]'²². Linschoten donne en 1610 une précision qui

15 Conti Nicolo de, *Le Voyage aux Indes de Nicolo de' Conti (1414-1439)*, trad. D. Ménard (Paris : 2004) 102. Bornéo – 'Java Majeure' – commercialisait les oiseaux provenant des îles d'Aru.

16 Pigafetta et alii, *Le Voyage de Magellan (1519-1522)* 224-225.

17 Gomara, *Histoire générale des Indes Occidentales* 284b-285.

18 Du Bartas Guillaume de Salluste, *La Semaine ou la création du monde*, éd. J. Céard (Paris : 2011), tome 1, 5^e jour, 268, v.748.

19 Linschoten, *Histoire de la navigation* 46.

20 Pires Tomé, *Suma Oriental* fol. 56v, dans Pigafetta, *Le Voyage de Magellan* 443.

21 Transylvanus Maximilianus, *La lettre de Maximilianus Transylvanus*, dans Pigafetta, *Le voyage de Magellan*, t. 2, 912.

22 Gomara, *Histoire générale des Indes Occidentales* 285.

souligne leur caractère solaire : 'Ils volent (à ce qu'on dit) en l'air continuellement contre le soleil, sans jamais toucher terre pendant qu'ils sont en vie [...]'²³. En 1647, Guidon de Chambelle, un mercenaire au service de la V.O.C.²⁴, affirme encore qu' 'on ne les voit jamais se reposer en terre ni sur arbres, et se tiennent toujours en l'air'²⁵. Enfin, l'article du Dictionnaire de Furetière, qui propose une synthèse des connaissances et des croyances qui avaient cours en 1690, assure que 'l'oiseau] habite au haut de l'air [...]', et l'on ne sait toujours rien sur l'origine exacte des paradisiers : '[...] on n'a pu découvrir d'où ils viennent. Ils volent toujours [...]'²⁶. La perception de l'oiseau de paradis a donc assez peu évolué depuis que Pierre Boaistuau écrivait dans ses *Histoires prodigieuses* en 1575 : 'Et qui voudra considérer les grands prodiges de nature qui se trouvent en ce petit animal, il confessera aisément que l'air, auquel il fait sa continuelle demeure, ne soutient rien de plus étrange ni de plus digne de contemplation'²⁷. L'oiseau est donc décrit comme sans lien, même temporaire, avec la terre.

Il ne se reproduit pas à terre, mais en vol. 'Le dos du mâle [...] est creux, explique Boaistuau en 1575, et la raison montre que la femelle fait ses œufs en cette cavité, vu que la femelle même a le ventre creux : en sorte que, par l'une et l'autre cavité, elle peut couvrir ses œufs'²⁸. En somme, la cavité dans le dos du mâle et celle dans le ventre de la femelle se complètent pour reconstituer en plein ciel le nid manquant. Guidon de Chambelle assure en 1647 à Malacca que 'les plus anciens du pays disent que [les oiseaux de paradis] font leurs petits sur le dos et les portent toujours jusqu'à ce qu'ils savent voler'²⁹. Le dictionnaire de Furetière ratifie la légende en 1690 : 'On dit que le mâle a une cavité sur son dos où la femelle couve ses petits'.³⁰ Que la propagation de l'espèce puisse être assurée en vol est une représentation qui n'est pas exclusivement réservée aux oiseaux de paradis. On y a eu également recours pour expliquer la nidification d'autres oiseaux qui ont paru vivre trop loin des côtes pour pouvoir venir s'y reproduire, et on a assez souvent supposé qu'ils restaient leur vie durant sans aucun contact avec la terre.

23 Linschoten, *Histoire de la navigation* 46.

24 V.O.C. : *Verenigde Oostindische Compagnie* ou Compagnie néerlandaise des Indes orientales.

25 Guidon de Chambelle Jean, *Mercenaires français de la V.O.C., La route des Indes hollandaises au XVII^e siècle*, éd. D. van der Cruysse (Paris : 2003) 141.

26 Furetière, entrée "Manucodiata", *Dictionnaire universel*.

27 Boaistuau Pierre, *Histoires prodigieuses* (Paris, Charles Macé : 1575) 158.

28 Boaistuau, *Histoires prodigieuses* 160. Boaistuau dit se référer au *De subtilitate* de Jérôme Cardan.

29 Guidon de Chambelle, *Mercenaires français de la V.O.C.* 141.

30 Furetière, entrée "Manucodiata", *Dictionnaire universel*.

D'autre part, l'oiseau n'aurait pas de pattes. Nicolo de' Conti témoigne dès 1439 : 'A Java Majeure, se trouve un oiseau sans pattes' et c'est la toute première notation de sa description³¹. Il n'a 'aucuns pieds et vole toujours et jamais ne se repose' selon Boaistuau en 1575³², et n'a 'ni pieds ni ailes' chez Linschoten en 1610³³. Là encore, il s'agit d'une croyance assez répandue à l'époque, souvent appliquée à des oiseaux supposés vivre continuellement en haute mer. Mais dans le cas précis du paradisière, la légende s'est trouvée curieusement corroborée par les faits, puisque nombre d'oiseaux de paradis étaient effectivement rapportés en Europe sans pattes, ce qui permet à Linschoten d'écrire 'comme on peut voir de ceux qu'on apporte par deçà', donc d'appuyer une assertion qui pourrait paraître peu crédible sur une donnée vérifiable dans les cabinets de curiosités européens³⁴.

Enfin, la rumeur dit que l'oiseau n'est trouvé à terre que mort. L'idée d'un oiseau si aérien que tout contact avec le sol lui serait fatal apparaît en filigrane dans nombre de descriptions, idée qui a pu se trouver confirmée par le nom *burung mati*, c'est à dire 'oiseaux morts', que les Malais donnent aux paradisières. Lopez de Gomara assure en 1552 : 'Jamais on ne les voit sur terre que morts, [...]'³⁵, et Linschoten confirme en 1610 qu' 'il n'y a nul qui puisse dire en avoir vu de vivants, car on ne les trouve en terre sinon morts'³⁶. Guidon de Chambelle rapporte en 1647 le témoignage d'un vieux Malais centenaire, qui aurait vu tomber un oiseau de paradis mort à ses pieds ; l'oiseau portait sur son dos quatre de ses petits nouvellement éclos, et 'trois qui ne l'étaient pas étant dans leurs œufs. Ceux qui étaient éclos moururent à l'instant. [Le vieux Malais] eut la curiosité de conserver les œufs afin de les faire éclore, mais il ne put, ains ces œufs crevèrent'³⁷. En 1658, Gautier Schouten dit que l'on trouve des oiseaux de paradis à l'île de Ternate, 'mais ils sont morts : on n'en voit jamais de vivants, et ils sont presque toujours secs'³⁸. L'article de Furetière ajoute en 1690 une précision étrange : 'on ne les trouve que morts le bec fiché en terre dans une île proche des Moluques'³⁹, comme si, précipités des couches supérieures de l'air, ils avaient effectué une chute aussi vertigineuse et fatale que celle d'Icare.

31 Conti, *Le Voyage aux Indes* 102.

32 Boaistuau, *Histoires prodigieuses* 158.

33 Linschoten, *Histoire de la navigation* 46.

34 Ibidem.

35 Gomara, *Histoire générale des Indes Occidentales* 285.

36 Linschoten, *Histoire de la navigation* 46.

37 Guidon de Chambelle, *Mercenaires français de la V.O.C.* 141.

38 Schouten Gautier, *Voyage de Gautier Schouten aux Indes Orientales, commencé l'an 1658, fini l'an 1665*, (Amsterdam, Pierre Mortier : 1708) 73.

39 Furetière, entrée "Manucodiata", *Dictionnaire universel*.

Le glissement vers '*un être venu du paradis*' s'est effectué d'autant plus aisément que l'oiseau paraissait doté d'un corps éthéré :

Il n'aurait pas besoin de se nourrir. C'est du moins ce qu'ont laissé croire sa légèreté et sa petitesse. On ne sait 'de quoi [les oiseaux de paradis] se nourrissent', écrivait Lopez de Gomara en 1552⁴⁰. Mais Boaistuau en 1575 pense qu'ils n'ont 'autre viande que la rosée du ciel, qui [leur] est le manger et le boire'⁴¹. 'Ils vivent sans manger' affirme résolument Du Bartas en 1578⁴². Et Guidon de Chambelle assure en 1647 qu'ils 'se tiennent toujours en l'air, prenant leur nourriture de l'air'⁴³, en quoi ils rejoignent en somme ce que Frank Lestringant appelle 'la bruisante cohorte des oiseaux qui se nourrissent de vent'⁴⁴.

D'autre part, l'oiseau de paradis vit sur les lieux mêmes où la tradition médiévale plaçait le paradis terrestre, en Extrême Asie. La beauté de son plumage pouvait déjà, à elle seule, accréditer l'idée d'une origine céleste, comme le remarquait Linschoten en 1610. Mais la tradition médiévale littéraire et cartographique situait, en se référant à la Bible, le paradis terrestre aux confins orientaux du monde habité, et les îles des Moluques dans la mer de Banda, ou les îles d'Aru dans la mer d'Arafura, offraient une localisation idéale⁴⁵. Les voyageurs européens interprètent donc assez spontanément les caractères merveilleux de l'oiseau en réinvestissant des données culturelles familières. Ces données semblent avoir été confirmées, de surcroît, par les récits glanés sur place auprès des autochtones. Pigafetta s'en fait le porte-parole aux Moluques : 'On nous dit que ces oiseaux venaient du paradis terrestre'⁴⁶, et Transylvanus, qui a rencontré Pigafetta à son retour en 1522, rapporte également, à l'issue de leur entrevue, que 'des hommes de Mahomet [...] avaient affirmé que ce petit oiseau venait du paradis'⁴⁷. En 1552, Gomara écrit à son tour que 'Les mores [...] croient que [ces oiseaux] font leur nid au Paradis [...] et même s'il prétend

40 Gomara, *Histoire générale des Indes Occidentales* 285.

41 Boaistuau, *Histoires prodigieuses* fol. 160v.

42 Du Bartas, *La Sepmaine* 236.

43 Guidon de Chambelle, *Mercenaires français de la V.O.C.* 141.

44 Léry Jean de, *Histoire d'un voyage faict en la terre du Brésil (1578)*, éd. F. Lestringant (Paris : 1994) 274, n. 4.

45 Voir Scafi A. (ed.), *The Cosmography of Paradise: The Other World from Ancient Mesopotamia to Medieval Europe*, Warburg Institute Colloquia 27 (Londres : 2016).

46 Pigafetta, *La relation d'Antonio Pigafetta et autres témoignages* 225.

47 Transylvanus, *La lettre de Maximilianus Transylvanus* 912.

prendre quelque distance avec ce qu'il considère comme une 'fable' digne de mahométans, il n'omet pas pour autant cette donnée récurrente⁴⁸.

4 Histoire du nom

Les noms donnés aux paradisiens ont reflété ces croyances. Ils se nomment *passaros de sol* chez les Portugais, *oiseaux de paradis* chez les Français, *bolon divata* ou *manuk dewata*, qui signifie *oiseaux des dieux*, en malais indonésien, aux îles d'Aru⁴⁹, et aux Moluques⁵⁰. *Manuk dewata* a été transcrit en *mamuco diata* chez Transylvanus en 1522, et l'appellation *manucodiatas* utilisée par les Italiens a donné en Français *manucodes*. Dans tous ces emplois, l'origine céleste des oiseaux, leur appartenance à un règne aérien supérieur sont soulignées, et qu'ils aient pu s'appeler également *burung mati*, 'oiseaux morts', ne faisait que confirmer leur totale incapacité à vivre ici-bas. La beauté du plumage et l'inexplicable absence de pattes régulièrement constatées par les Européens paraissent avoir fonctionné comme éléments déclencheurs dans la construction de la fiction. Partant de ces deux données vérifiables, qui marquaient d'emblée le caractère merveilleux de l'oiseau de paradis, les voyageurs ont laissé l'imagination apporter des réponses aux autres questions demeurées en suspens. Les observations effectuées autorisaient des hypothèses prodigieuses, elles étaient d'autant plus recevables que le réel lui-même était déjà troublant.

Ainsi, lorsqu'en 1639, Rembrandt travaille à *Deux études pour un oiseau de paradis*, conservées au musée du Louvre, il semble que l'oiseau naturalisé provenant de Nouvelle-Guinée qui lui servit de modèle ne démentait en rien sa légende. Car non seulement les pattes sont absentes, mais le corps est si fuselé, les plumes d'une longueur si infinie que l'on a pu décrire cet oiseau comme 'd'une légèreté et célérité si admirable, qu'il n'y a navire poussée des plus impétueux vents qu'il ne devance en la mer'⁵¹.

48 Gomara, *Histoire générale des Indes Occidentales* 285.

49 Pires, *Summa Orientale*, fol. 156v, dans Pigafetta, *Le Voyage de Magellan* 443.

50 Pigafetta, *La Relation d'Antonio Pigafetta et autres témoignages* 225.

51 Boaistuau, *Histoires prodigieuses* 158.

5 Contradictions, et permanences de la merveille

Cependant, les observations effectuées par des voyageurs de plus en plus nombreux, dont certains étaient attentifs à dire le vrai, ont déstabilisé le mythe dès le début du XVII^e siècle :

Les premières descriptions comportaient déjà des contradictions qui font naître le doute et hypothèquent certaines assertions. En 1439, Nicolo de' Conti décrit l'oiseau sans pattes observé à Bornéo et indique cependant à la ligne suivante qu' 'il se pose toujours sur les arbres'⁵². Pigafetta assure que le paradisiier qu'il a vu aux Moluques en décembre 1521 n'a pas d'ailerons, mais dans le cours de la description il note que 'toutes ses autres plumes excepté les ailes sont de couleur tannée'⁵³. Il existe donc des incohérences dans certains témoignages des découvreurs. D'autre part, les avis divergent sur la question des pattes. Si la plupart des voyageurs soulignent leur absence, quelques-uns au contraire les mentionnent. Pigafetta décrit des 'jambes longues d'une paume et déliées comme une plume'⁵⁴. Lopez de Gomara assure lui aussi en 1552 que les paradisiens 'ont les jambes longues d'un empan'⁵⁵. En fait, de nombreuses descriptions paraissent faire cohabiter de force le discours convenu sur l'oiseau de fiction avec des observations personnelles qui infirment en partie ce discours. Malgré tout, pendant plus d'un siècle, les notations discordantes semblent n'avoir pas été prises en compte, sans doute parce que l'aura merveilleuse qui s'était construite autour de l'oiseau de paradis satisfaisait d'abord l'hypocrite lecteur des relations de voyage, qui affirme toujours hautement ne chercher que la connaissance du vrai, mais se montre en fait bien plus épris de prodiges que d'exactitude.

D'autre part, certaines composantes de la légende n'ont pas vraiment convaincu. Par exemple, que l'oiseau ne se pose jamais, et donc ne cesse jamais de voler, a paru peu crédible, et Boaistuau envisage dès 1575 qu'il puisse se reposer 'à quelque arbre ou rameau, où il se pend et attache par l'un de ses longs poils', faisant allusion aux très longues et très fines plumes de la queue, qui trouvaient ainsi une fonction, selon un finalisme que n'aurait pas désavoué Aristote⁵⁶. Mais, en 1690, Furetière considère l'hypothèse émise par Boaistuau

52 Conti, *Le Voyage aux Indes de Nicolo de' Conti* 102.

53 Pigafetta, *La Relation d'Antonio Pigafetta et autres témoignages* 225.

54 Ibidem 224.

55 Gomara, *Histoire générale des Indes Occidentales* 284.

56 Boaistuau, *Histoires prodigieuses* 158. Boaistuau propose également une autre fonction pour les plumes de la queue : 'En la queue du mâle, se tient un fil plus long que trois

comme caduque : 'On a fait d'abord accroire aux Européens [...] que quand [l'oiseau de paradis] voulait dormir, il se pendait à ses plumes aux rameaux de quelque arbre'⁵⁷. Cette supposition, qui remplaçait une donnée merveilleuse par une autre qui ne l'était pas beaucoup moins, avait toutefois le mérite de rendre l'oiseau de paradis à la terre dont on l'avait d'abord exclu.

Par ailleurs, les nations européennes concurrentes qui participent à la course aux épices envoient des expéditions de plus en plus nombreuses dans les îles de la Sonde, les escales s'y multiplient, les observations directes effectuées par les voyageurs offrent un autre éclairage qui défait progressivement la merveille, et la fiction s'érode.

L'absence de corruption des oiseaux morts avait d'abord paru surnaturelle. Il semblait en effet que l'oiseau n'était pas voué au pourrissement, à l'instar des autres créatures terrestres. Mais en 1619, le capitaine Elie Ripon, qui séjourne dans les îles de la mer de Banda, rend compte du processus de naturalisation mis en place par les insulaires qui commercialisent les oiseaux de Paradis :

Les habitants les tirent avec des arcs et leur tirent hors les boyaux et les mettent sécher dedans le sable auprès de la mer, qu'est si chaud à cause du soleil, comme si on l'avait chauffé au feu, et les laissent là dedans le sable sécher deux ou trois jours jusques à ce qu'ils soient tout secs, comme s'ils avaient été embaumés⁵⁸.

Ils utilisent donc un procédé de dessiccation naturel, par séchage dans le sable brûlant qui tient lieu de four. Ce témoignage redonne d'abord à l'oiseau une chair, que l'on doit priver de son humidité pour en assurer la conservation, et des entrailles, dont il faut le vider. En réintégrant le corps putrescible des êtres vivants, il quitte les sphères célestes pour les contingences du monde terrestre. Et la notation de Gautier Schouten en 1658 : 'on n'en voit jamais de vivans, et ils sont presque toujours secs' n'ajoute plus un témoignage supplémentaire à la fiction, elle illustre au contraire le processus décrit par Ripon, c'est-à-dire

paumes, de couleur noire, moyen entre carré et rond, ni gros ni menu, presque semblable à celui dont les cordonniers cousent leurs pantoufles et souliers. J'estime que la femelle est liée et jointe au mâle plus fermement par ce fil, quand elle couve ses œufs.' Ibidem 160. La plume-lien assurerait donc la réussite de la couvaison, supposée avoir lieu en plein vol.

57 Furetière, entrée "Manucodiata", *Dictionnaire universel*.

58 Ripon Elie, *Voyages et aventures aux Grandes Indes (1617-1627)*, éd. Y. Giraud (Paris : 1997) 72.

les moyens mis en œuvre pour conserver sans dommage la peau emplumée, vendue toujours très cher aux Européens⁵⁹.

L'absence de pattes a également donné lieu à des hypothèses nombreuses dont la créativité fait sourire le lecteur moderne, avant leur révocation par l'observation. Car les oiseaux morts achetés par les Européens étaient effectivement privés de leurs pattes. Cette observation fréquemment renouvelée accréditait en partie la fiction de l'oiseau venu du paradis, qui aurait vécu exclusivement dans les couches élevées de l'air dont il se nourrissait et où il se reproduisait. Le capitaine Ripon est le premier qui, à la suite de son séjour aux îles de Banda en 1619, affirme avoir vu de ses propres yeux 'poser et manger et boire tels oiseaux à terre', et avoir rapporté des spécimens 'avec tous leurs membres tout entiers', mais son témoignage, très précis et sans aucune ambiguïté, s'est perdu dans la vaste rumeur merveilleuse dont l'oiseau de paradis était l'objet⁶⁰. Car le voyageur reste souvent tiraillé entre le désir de complaire à un lectorat qui demande que lui soit continuellement reconfirmé la fiction de la merveille qui le séduit, et la nécessité d'établir son statut d'observateur crédible de faits réels, qui authentifie son voyage et témoigne de son honnêteté comme narrateur. La plupart des descriptions demeurent donc longtemps ambivalentes, faisant coexister à quelques lignes d'intervalle la fiction et sa remise en cause par l'observation. La conviction que les pattes étaient probablement coupées par les insulaires avant commercialisation s'est imposée assez vite, peut-être parce que quelques preuves de leur existence demeuraient encore visibles sur les oiseaux naturalisés : 'on nous les apporte avec quelques nerfs et filets seulement' observe Vincent Leblanc en 1649⁶¹. En revanche, les motifs avancés par les voyageurs pour justifier l'ablation des pattes peuvent varier sensiblement : 'Ce sont oiseaux [...] de fort beau plumage, mais les pieds si vilains et difformes que les gens du pays les coupent, ce qui a fait croire qu'ils n'avaient point de pieds', assure Guidon de Chambelle en 1647⁶². En somme, le détail capable de déparer la grande beauté de l'ensemble serait éliminé. En 1649, Vincent Leblanc va dans le même sens en supposant que les insulaires mutilent les

59 Schouten, *Voyage de Gautier Schouten* 73.

60 Ripon, *Voyages et aventures aux Grandes Indes (1617-1627)* 72. Deux exceptions majeures cependant : le naturaliste Charles de L'Écluse et le peintre Jan Brueghel l'Ancien considèrent tout deux que l'oiseau de paradis a bel et bien des pattes : voir Rikken M.E. – Smith P.J., "Jan Brueghel's *Allegory of Air* (1621) from a natural historical perspective", *Nederlands Kunsthistorisch Jaarboek* 61 (2011) 86-114 (spécialement 95-97). Voir aussi Ogilvie B., *The Science of Describing* (Chicago : 2004) 248-252.

61 Le Blanc Vincent, *Les Voyages fameux du sieur Vincent Le Blanc Marseillais [...]* (Paris, Gervais Clouzier : 1649) 173.

62 Guidon de Chambelle, *Mercenaires français de la V.O.C.* 141.

oiseaux pour accréditer la légende qui les entoure : 'ils leur coupent les pieds fort dextrement pour les faire trouver plus rares'⁶³. Mais en 1665, Jean-Baptiste Tavernier envisageait pour sa part un tout autre scénario. Il pense que, enivré par une consommation excessive de noix de muscade, l'oiseau de paradis tombe mort sur le sol, et que

aussitôt les fourmis dont le pays est plein leur viennent manger les pieds. C'est de là que vient ce que l'on dit d'ordinaire, qu'on n'a jamais vu d'oiseau de Paradis avec des pieds, ce qui n'est toutefois pas absolument véritable : car j'en ai vu trois ou quatre avec leurs pieds, sur lesquels les fourmis n'avaient pas encore eu le temps de se jeter⁶⁴.

Explication aussi pleine de créativité qu'elle manque de vraisemblance (de surcroît, elle reprend discrètement le motif de l'oiseau doté d'un corps surnaturel puisque seules les pattes seraient mangées par les fourmis). Elle a dû cependant rencontrer une certaine audience car le *Dictionnaire* de Furetière, qui résume en 1690 les diverses thèses émises, ne l'a pas oubliée. Si l'on a pu croire que les paradisiers n'avaient pas de pattes, lit-on, 'c'est en effet que les marchands les coupent, pour les rendre plus extraordinaires. Ou comme disent d'autres, que les grandes fourmis qui sont abondantes en ces pays-là les leur mangent'. Mais finalement, l'article penche en faveur d'une sorte de sage précaution pour sauvegarder un plumage particulièrement fragile : 'On leur coupe les pieds de peur qu'ils ne gâtent leurs plumes qui sont fort fines'⁶⁵. Les opinions sont si diverses que les voyageurs du début du XVIII^e siècle n'osent plus trop se prononcer quelquefois. Jean-Baptiste Le Gentil de La Barbinais, qui se trouve en mars 1717 sur les côtes de Java, se retranche derrière un silence prudent : 'Il y a [...] dans cette île des Oiseaux du Paradis, qui sont fameux par la beauté de leur plumage, mais il est malaisé de les atteindre, c'est le Renard des Oiseaux'⁶⁶. Le lecteur n'était pas habitué à une telle concision. D'une certaine manière, le mystère s'accroît autour de l'oiseau, comme si le grand nombre d'hypothèses surprenantes dont il a été l'objet depuis des siècles avait abouti au moins à une conviction : l'étrangeté de l'oiseau de paradis est si absolue qu'elle induit nécessairement l'extravagance répétée des narrations.

63 Le Blanc, *Les Voyages fameux du sieur Vincent Le Blanc Marseillais* [...] 173.

64 Tavernier J.B., *Les Six voyages de Jean-Baptiste Tavernier* [...], *Seconde partie où il est parlé des Indes et des îles voisines* (Paris, Gervais Clouzier et Claude Barbin : 1676) 263.

65 Furetière, entrée "Manucodiata", *Dictionnaire universel*.

66 Le Gentil de la Barbinais Jean-Baptiste, *Nouveau Voyage autour du monde*, tome 3 (Amsterdam, Pierre Mortier : 1728) 55.

Au fil du temps, le paradisière a intégré les système de classification de plus en plus précis des naturalistes, mais l'aura merveilleuse qui l'entourait s'est maintenue malgré tout.

L'oiseau ne se nourrit plus de vent, mais on lui suppose maintenant *une nourriture précieuse et parfumée* qui reste en relation avec la représentation éthérée que l'on se fait de lui. Lopez de Gomara écrivait en 1552 : 'Nous autres nous pensons que [les oiseaux de paradis] se nourrissent et maintiennent de rosée et des fleurs des épices', et il croyait émettre un avis tout à fait judicieux par rapport aux légendes en cours chez les Mahométans, qu'il se plaît à railler⁶⁷. En 1649, Vincent Leblanc prétend avoir observé un oiseau vivant : 'J'en ai vu un vivant à Goa qu'un Portugais nourrissait de fleurs les plus délicates, disant que cet oiseau aimait fort cela, et surtout la fleur [...] de girofle'⁶⁸. Le paradisière est frugivore, quelques espèces sont insectivores, et ces données émergent peu à peu dans les descriptions. En 1665 par exemple, Tavernier a construit toute l'explication pour justifier l'absence des pattes sur le fait que l'oiseau 'qui est fort friand des noix muscades ne manque pas de venir s'en saouler dans la saison'⁶⁹. L'article de Furetière en 1690 suppose que les paradisières 'se nourrissent des mouches qu'ils prennent en l'air'⁷⁰. Notations qui tiennent donc davantage compte de la réalité et de critères plus en relation avec l'ornithologie, même si elles restent isolées et peu précises.

*D'autre part, sur toute la période étudiée, l'oiseau de paradis a constitué un cadeau royal au sens propre*⁷¹. En 1521, le roi de Tidore fait présent de dix oiseaux de Paradis que l'expédition Magellan doit rapporter au roi de Castille, auquel le roi de Bacchian aux Moluques en offre également deux particulièrement beaux⁷². 'Les rois de ces îles dessus dites envoyèrent à Charles cinquième Empereur, cinq de ces petits oiseaux morts, car comme nous avons dit aucun ne les peut appréhender vifs', signale à son tour Boaistuau en 1575⁷³. Linschoten estime en 1610 que l'on en voit 'par deçà, quoy que fort rarement,

67 Gomara, *Histoire générale des Indes Occidentales* 285.

68 Le Blanc, *Les Voyages fameux du sieur Vincent Le Blanc Marseillais* [...] 173.

69 Tavernier, *Les six voyages de Jean-Baptiste Tavernier* [...], *Seconde partie où il est parlé des Indes et des îles voisines* 263.

70 Furetière, entrée "Manucodiata", *Dictionnaire universel*.

71 En ce qui concerne l'oiseau de paradis comme cadeau diplomatique, voir Swan C., "Birds of Paradise for the Sultan. Early Seventeenth-Century Dutch-Turkish Encounters and the Uses of Wonder", *De Zeventiende Eeuw. Cultuur in de Nederlanden in interdisciplinair perspectief* 29, 1 (2013) 49-63.

72 Voir Pigafetta, *Le Voyage de Magellan* tome 1, 224, et tome 2, 651.

73 Boaistuau, *Histoires prodigieuses* fol. 159r.

pour être de trop grand prix⁷⁴. Lui-même en a rapporté un couple pour le Docteur Paludanus, médecin et collectionneur néerlandais, dont le cabinet d'art et de curiosités à Enkhuizen était célèbre dans toute l'Europe. Il lui offre 'pour ornement de son étude' le mâle et la femelle, puisque leurs plumages diffèrent sensiblement. Tavernier rapporte en 1665 qu' 'un marchand français nommé Contour en envoya un d'Alep avec les pieds au Roi Louis XIII, qui en fit beaucoup d'état, parce qu'il était fort beau'⁷⁵. Les Hollandais pour leur part en offrirent au Grand Mogol Shah Jahan en 1653, puis à son fils et successeur Aurangzeb en 1662.

Aujourd'hui encore, la représentation scientifique s'accommode de la fiction avec une certaine aisance. Le paradisier grand-émeraude – celui qui est le plus souvent évoqué dans les voyages anciens – a reçu le nom de *Paradisaea apoda*, alors même que l'oiseau est doté de pattes robustes et d'un bec épais, au point que certaines classifications le rangent dans la famille des corvidés. La haute joaillerie s'inspire elle aussi de l'oiseau mythique, si longtemps considéré comme un présent royal, et une récente collection (2009) de la maison Van Cleef et Arpels lui est entièrement dédiée. Pour tout le monde, l'oiseau de paradis – désormais rigoureusement protégé – est resté l'oiseau des îles lointaines, aux longues plumes éblouissantes et vaporeuses. Il se différencie des autres dans l'étrange et le beau, et semble répondre avant tout à l'idée que l'on se fait d'un oiseau, dans l'absolu : une émanation de l'air et de la lumière, un souffle léger et coloré, comme, finalement, se plaisaient à le décrire les voyageurs d'autrefois.

Bibliographie

- Aldrovandi Ulisse, *Ornithologiae hoc est de avibus historiae libri XII* (Bologne, Franciscus de Franciscis Senensis : 1599).
- Bachelard G., *L'Air et les songes. Essai sur l'imagination du mouvement* (Paris : 1992).
- Belon du Mans Pierre, *Histoire de la nature des oyseaux* (Paris, Guillaume Cavellat : 1555).
- Boaistuau Pierre, *Histoires prodigieuses* (Paris, Charles Macé : 1575).
- Camerarius the Younger Joachim, *Symbolorum et emblematum ex volatilibus et insectis desumptorum centuria tertia collecta* (Nuremberg, Paulus Kaufmann : 1596).

74 Linschoten, *Histoire de la navigation* 46.

75 Tavernier, *Les six voyages de Jean-Baptiste Tavernier [...]*, *Seconde partie où il est parlé des Indes et des îles voisines* 263.

- Conti Nicolo de', *Le Voyage aux Indes de Nicolo de' Conti (1414-1439)*, trad. D. Ménard (Paris : 2004).
- Furetière Antoine, *Dictionnaire universel* (La Haye – Rotterdam, Arnoud et Reinier Leers : 1701).
- Gassendi Pierre, *Opera omnia*, éd. Nicolao Averanio, 6 vols. (Florence, Typus regiae celsitudinis : 1727).
- Gessner Conrad, *Historia animalium libri III qui est de avium natura* (Zurich, Christopher Froschauer : 1555).
- Gomara Lopez de, *Histoire générale des Indes Occidentales*, trad. Martin Fumée (Paris, Michel Sonnius : 1584).
- Grandidier A. et G. (éds.), *Collection des ouvrages anciens concernant Madagascar*, Comité de Madagascar, vol. 3 (Paris : 1905).
- Guidon de Chambelle Jean, *Mercenaires français de la V.O.C. – La route des Indes hollandaises au XVII^{ème} siècle*, éd. D. van der Cruysse (Paris : 2003).
- Huigen S., "Birds of Paradise and Sea People. Animals as a Rhetorical Construct in François Valentyn's Natural History of Amboina", *Tijdschrift voor geschiedenis* 125, 4 (2012) 504-519.
- Le Blanc Vincent, *Les Voyages fameux du sieur Vincent Le Blanc Marseillais [...]* (Paris, Gervais Clouzier : 1649).
- Le Gentil de la Barbinais Jean-Baptiste, *Nouveau Voyage autour du monde*, tome 3 (Amsterdam, Pierre Mortier : 1728).
- Léry Jean de, *Histoire d'un voyage faict en la terre du Brésil (1578)*, éd. F. Lestringant (Paris : 1994).
- Linschoten Jan Huygen van, *Histoire de la navigation de Jean Hugues de Linscot Hollandais [...]* (Amsterdam, Henry Laurent : 1610).
- Marcaïda J.R., "Rubens and the Bird of Paradise. Painting Natural Knowledge in the Early Seventeenth Century", *Renaissance Studies* 28, 1 (2014) 112-127.
- Mocquet Jean, *Voyage à Mozambique et Goa, La relation de Jean Mocquet (1607-1610)*, éd. Xavier de Castro (Paris : 1996).
- Pigafetta Antonio et alii, *Le Voyage de Magellan : la relation d'Antonio Pigafetta et autres témoignages (1519-1522)*, éds. de Castro X. – Hamont J. – Thomaz L.F. (Paris : 2010).
- Rikken M.E. – Smith P.J., "Jan Brueghel's *Allegory of Air* (1621) from a natural historical perspective", *Nederlands Kunsthistorisch Jaarboek* 61 (2011) 86-114.
- Ripon Elie, *Voyages et aventures aux Grandes Indes (1617-1627)*, éd. Y. Giraud (Paris : 1997).
- Sambucus Johannes, *Emblemata* (Antwerp, Christoph Plantin : 1564).
- Scafi A. (éd.), *The Cosmography of Paradise : The Other World from Ancient Mesopotamia to Medieval Europe*, Warburg Institute Colloquia 27 (Londres : 2016).
- Schouten Gautier, *Voyage de Gautier Schouten aux Indes Orientales, commencé l'an 1658, fini l'an 1665* (Amsterdam, Pierre Mortier : 1708).

Swan C., "Birds of Paradise for the Sultan. Early Seventeenth-Century Dutch-Turkish Encounters and the Uses of Wonder" *De Zeventiende Eeuw. Cultuur in de Nederlanden in interdisciplinair perspectief* 29, 1 (2013) 49-63.

Tavernier Jean-Baptiste, *Les Six voyages de Jean-Baptiste Tavernier [...], Seconde partie où il est parlé des Indes et des îles voisines* (Paris, Gervais Clouzier et Claude Barbin : 1676).

Zuraga Gomes Eanes de, *Chronique de Guinée (1453)*, trad. L. Bourdon (Paris : 2011).

Du nouveau sur la licorne : le rôle des cabinets de curiosités dans l'avancée des savoirs

Myriam Marrache-Gouraud

À la Renaissance, la curiosité est un mode d'accès au savoir.¹ Tout ce qui est rare, énigmatique et remarquable est susceptible de provoquer la *libido sciendi*, autre nom de la curiosité. C'est dans le cabinet de curiosités, lieu étroit, privé, secret, presque un musée, que le collectionneur ambitionne de rassembler toutes les merveilles de la création divine, selon la logique du microcosme ou de l'encyclopédisme. Enjeu de prestige pour les princes fortunés qui déploient leurs *mirabilia* dans l'idée d'une démonstration de faste et de richesse ; enjeu de théologie naturelle, et parfois aussi de studieuse avancée taxinomique pour les collectionneurs plus modestes, simples apothicaires, professeurs ou lettrés éclairés, qui dans leur inventaire du monde ont le souci de mettre en œuvre un classement pertinent grâce à la recherche savante et par l'observation : leurs cabinets sont aussi des lieux de visite au profit de l'étude, et ils contribuent ainsi à l'enrichissement de l'histoire naturelle qui s'écrit à la Renaissance à l'ombre des pages des livres des Anciens (Pline, Aristote, Théophraste, Dioscoride entre autres) et à la lumière nouvelle de l'observation des *realia*². Dans la mesure où ils amassent, aux côtés d'ouvrages de référence, des objets matériels qui se prêtent à l'examen visuel et à la manipulation, les collectionneurs de curiosités peuvent sans doute être considérés comme des agents importants de la modification des savoirs et des descriptions naturalistes.

Le choix des objets obéit à un double souci de recherche systématique du rare et de jeu avec les stéréotypes attendus dans ce genre de lieu. Ainsi, dans la plupart des cabinets, parmi les curiosités naturelles (*naturalia*) exposées on trouvera un crocodile accroché au plafond, des serpents géants et autres animaux de grande taille, des côtes de baleines, un bec de toucan, un tatou,

1 Cet article est une version amplement enrichie et remaniée d'une communication donnée en 2012 au colloque du CIR 17 à Durham. Il reprend et complète une précédente publication intitulée "Les secrets de la licorne", in Maber R. (éd.), *La France et l'Europe du Nord au XVII^e siècle* (Tübingen : 2016) 195-205.

2 Nous entendons par 'histoire naturelle' l'ensemble des savoirs, descriptions, noms et classements qui se rapportent aux productions de la nature et à leurs dérivés (recettes, objets d'art, etc.).

un herbier, des coquillages. Les plus chanceux bénéficient des découvertes issues des voyages vers le Nouveau Monde, d'où reviennent des objets inconnus faits de la main de l'homme (*artificialia*) comme des vanneries, des ouvrages de plumes, d'étranges instruments de musique ou des armes bizarres. Les éléments très anciens ne sont pas exclus : de nombreuses collections humanistes recueillent exclusivement des monnaies romaines, des médailles, des statues, des fragments de pierres gravées, des inscriptions, autant de sources de savoirs en ce siècle qui cherche à redécouvrir et à comprendre l'Antiquité. Une fois qu'ils ont rejoint la collection de raretés, tous ces objets prennent place dans un ensemble destiné à provoquer l'admiration, et qui fait donc se rencontrer *naturalia* et *artificialia*. L'exposition elle-même fait se côtoyer ces 'merveilles de la nature et de l'art', et le catalogue imprimé mêle également les deux types d'objets.

Dès les premiers cabinets de curiosités, les cornes de licorne ont eu une place de choix chez les collectionneurs, car leur présence, malgré leur rareté insigne, accrédite la fable : ces cornes sont le signe que les animaux légendaires ont quelque vérité. Tous les plus beaux cabinets d'Europe – Windsor, Dresde, Prague, où la corne de licorne est l'une des deux seules pièces déclarées inaliénables parmi la somptueuse collection des Habsbourg³, ainsi que certains trésors d'église, et, parmi les plus fameux, en France Saint Denis, ou Saint Marc à Venise, s'enorgueillissent d'en posséder une. L'objet entre donc dans les collections profanes et sacrées, princières ou pas. Il est effectivement fascinant : par la beauté de son ivoire torsadé et de sa pointe effilée, par sa taille, parfois gigantesque (deux mètres ou plus), par son origine supposée fabuleuse, par ses vertus curatives dont on prétend à l'époque qu'elles seraient universelles, guérissant de tout poison. La corne de licorne se vend entière, huit à dix fois le prix de son poids en or, ou en tranches fines, parfois en poudre. Ambroise Paré énumère déjà ses vertus supposées en 1582⁴, et elles semblent encore bien accréditées dans l'ouvrage d'Anselme Boece de Boodt traduit en français en 1644 :

3 Voir *Le Bestiaire de Rodolphe II*, éd. Haupt H. – Irblich E. – Staudinger M. – Vignau-Wilberg T. (Paris : 1990) 124.

4 Ambroise Paré insiste sur ces différents points dans son *Discours de la momie, de la licorne, des venins et de la peste* (Paris, Gabriel Buon : 1582). Voir en particulier les chapitres vi (pour les cornes des trésors des papes de Rome, de Saint Marc à Venise, de Strasbourg et de Saint-Denis en France, fols. 22r-22v), chap. xiv (sur les vertus supposées de la corne, fol. 31v et sur la réfutation par l'expérience fols. 32r-32v), chap. xv (au sujet du prix 'beaucoup plus cher que l'or', fols. 33r-33v). Voir à ce sujet Marrache-Gouraud, M., "Affronter et ravir la licorne des autres. Le chemin d'Ambroise Paré parmi les autorités", in Giacomotto-Charra V. – Silvi C. (éds.), *Lire, choisir, écrire. La vulgarisation des savoirs du Moyen Âge à la Renaissance* (Paris : 2014) 185-198.

Depuis plusieurs années aucune chose n'a possédé tant de dignité et d'estime parmi les Joaliers, et les Peintres que la corne de licorne, comme n'estant rien au monde de plus souverain pour connoistre, pour preserver, et pour surmonter toutes sortes de venins : en sorte qu'elle surpasse de beaucoup le prix de l'or⁵.

Mais comment savoir de quel animal elle provient ? A. de Boodt poursuit sur la même page :

Mais parce que plusieurs doutent, si l'animal dont la corne doit posséder tant de vertus admirables, est sur la terre, ou non ; les uns l'assurant et le peignant, et les autres nians qu'il s'en trouve, j'ay jugé à propos, puis qu'il y a plusieurs animaux, qui portent une corne seulement au front ; à qui pourtant le nom de Licorne convient, de les décrire tous.

La topique de l'admiration pose donc une question d'ordre épistémologique, qu'il importe de démêler pour accréditer la valeur de l'objet, à moins que cette incertitude-même ne soit de nature à augmenter la valeur de l'objet.

A. de Boodt, qui est le médecin de l'un des plus grands collectionneurs d'Europe, connaît son sujet. Sa question est double : 1. L'animal est-il terrestre ou pas ? 2. Doit-on considérer comme 'licornes, tous les animaux qui mériteraient ce nom au prétexte qu'ils ont une 'corne au front' ? La première question pourrait remettre en cause la fable et la Bible, deux sources majeures où figurent des licornes terrestres. La seconde a des implications pour les collectionneurs, la pharmacopée et les marchands, car elle permettrait de distinguer la 'vraie' de la 'fausse' licorne : toute 'corne au front' n'a pas les vertus supposées de celle de la licorne.

De fait, dès la fin du XVI^e et pendant tout le XVII^e siècle, les savants qui voyagent et visitent les différents cabinets, autant que les collectionneurs eux-mêmes, comparant ces cornes aux descriptions d'animaux similaires ou approchants que rapportent les voyageurs, s'interrogent sur la véritable origine des cornes en question. Peu à peu, par recoupements, un savoir se construit pour révéler que ces cornes, d'abord, viennent d'un animal non pas terrestre, mais marin, au point d'arriver à la conviction savante que ce sont des rostrs de narval – nouvelle nomenclature qui n'abolira pas, paradoxalement, la croyance en la fable ni l'intérêt fasciné pour ces curiosités, comme le montre la survivance du terme *licorne*.

5 Anselme Boece de Boodt, médecin de Rodolphe II, *Le Parfait joaillier ou histoire des pierres* (Lyon, Jean-Antoine Huguetan : 1644) (trad. de Jean Bachou du texte latin original de 1609), livre II, chap. CCXLIV, 552.

À la fin du XVI^e siècle, Ambroise Paré avait cherché à prouver que les propriétés supposées de cette corne n'étaient qu'une imposture lucrative destinée à enrichir les apothicaires malhonnêtes⁶. Mais ces dénonciations arrivaient trop tôt. Nul n'était prêt à les entendre. Environ cinquante ans plus tard, c'est dans un cabinet de curiosités du Danemark qu'il sera prouvé que la licorne telle qu'on se la figure, le cheval blanc fabuleux, n'existe pas. La présente étude se propose d'identifier les chemins qui ont mené à la démonstration que la corne de licorne n'est pas une corne, et que l'animal qui la porte n'est pas une licorne, en insistant sur le rôle décisif qu'ont joué les cabinets de curiosités dans une telle (r)évolution épistémologique. Pareille découverte ne sera pas sans conséquences parmi les savants, mais aussi dans les circuits commerciaux, qui cherchent à nier cette avancée pour continuer à mystifier les acheteurs. Contrairement à l'idée véhiculée par l'historiographie traditionnelle sur la question⁷ qui tend à souligner la collaboration entre savants et marchands, nous montrerons que sur le point névralgique de la licorne, logique taxinomique et logique économique entrent en concurrence.

C'est donc le chemin de la découverte, de sa réception française, de sa diffusion et des résistances qu'elle a rencontrées, que nous souhaitons ici retracer grâce au cas exemplaire des cornes de licornes, afin de montrer quel rôle ont pu tenir les cabinets de curiosités aussi bien dans les réseaux qui ont constitué le savoir moderne, que dans la survivance paradoxale de la merveille.

1 L'Énigme d'un nouvel animal, la 'licorne de mer'

Une anecdote racontée par Charles de Rochefort dans son *Histoire naturelle et morale des îles Antilles de l'Amerique* dit le prix qu'on attache à cette sorte d'objets au milieu du XVII^e siècle et montre que ce genre de corne peut venir d'un animal marin⁸. L'histoire raconte qu'en 1644, un animal que Rochefort appelle 'licorne de mer' et dont la corne est, dit-il, gigantesque, s'est échoué sur l'île de la Tortue, voisine de Saint Domingue. Il en donne une description détaillée :

6 Tout le *Discours de la momie, de la licorne, des venins et de la peste* tend à démystifier ces impostures médicales grâce auxquelles s'enrichissent indûment les apothicaires – c'est pourquoi la momie est associée à la licorne dans ce traité.

7 Voir en particulier Smith P.H. – Findlen P. (éds.), *Merchants and Marvels : Commerce, Science and Art in Early Modern Europe* (New York – London : 2002) et Ogilvie B.W., *The Science of Describing* (Chicago : 2006).

8 Rochefort Charles de, *Histoire naturelle et morale des îles Antilles de l'Amerique* (Rotterdam, Arnould Leers : 1658). Cet ouvrage se fait l'écho des pratiques des collectionneurs de curiosités, signalant à chaque fois qu'il en a l'occasion l'intérêt qu'on prête en Europe à tel ou tel objet de l'Amérique dont il est amené à parler. L'anecdote signalée ici se trouve dans le chapitre 18, 184-188.

c'est un poisson à écailles et à nageoire dorsale, mais qui possède tête de cheval et queue fourchue. L'animal, cheval de mer cornu, est donc décrit comme un équivalent aquatique de la licorne chevaline terrestre bien connue. Il ne contredit pas l'apparence fameuse rapportée par les fables, puisqu'il en est une transposition maritime : il mérite bien son nom de licorne de 'mer'⁹. Une fois tuée, la bête nourrit quelque trois cents personnes, mais que faire de la corne, véritable merveille 'parfaitement belle, longue de 9 pieds et demi' ? Elle sera mise en scène comme une curiosité :

Les rares dépouilles de ce merveilleux animal, et surtout sa teste, et la riche corne qui y estoit attachée, ont demeuré pres de deux ans, suspendues au corps de garde de l'île, jusques à ce que Monsieur le Vasseur qui en étoit Gouverneur, voulant gratifier Monsieur des Trancarts, Gentilhomme de Saintonge, qui l'étoit venu voir, luy fit present de cette corne. Mais quelque peu après m'étant embarqué dans un vaisseau de Flessingue avec le gentilhomme, qui avoit cette precieuse rareté en une longue caisse, notre vaisseau se brisa près de l'île de la fayale, qui est l'une des Açores. De sorte que nous fimes perte de toutes nos hardes et de toutes nos marchandises. Et ce gentilhomme regretta surtout sa caisse¹⁰.

On peut considérer que ce Monsieur des Trancarts avait eu beaucoup de chance car cette corne, qui avait été exposée comme une curiosité pendant deux ans, lui avait été offerte – et la tristesse de la perte de 'cette précieuse rareté' n'en est que plus grande, les prix étant en effet encore exorbitants en 1644, à proportion du mystère qui entoure l'animal. Les marins des pays du Nord ont bien compris qu'un poisson fournissait cette corne, ils en rapportent des quantités de leurs expéditions au Groenland et les commercialisent dans toute l'Europe. Néanmoins, ces objets vendus en tant que cornes 'de licorne' viennent de la mer. Comme nul n'ose penser que la licorne décrite par les Anciens pourrait ne pas exister, on imagine simplement qu'il y en a sans doute deux espèces, l'une, terrestre et fort rare, attestée parfois en Orient ou en Afrique, et l'autre, marine, vivant dans les régions septentrionales.

Présentons à présent Ole Worm (1588-1654), figure centrale de cette histoire. L'homme est un savant, professeur de médecine à l'Université de Copenhague, et a beaucoup voyagé à travers l'Europe. Il connaît de nombreuses personnalités scientifiques, avec qui il entretient une correspondance régulière en

9 C'est un semblable cheval marin avec corne au front qui est représenté en tant que licorne de la prestigieuse collection pragoise dans *Le Bestiaire de Rodolphe II*, planche 12, 120-121.

10 Rochefort, *Histoire naturelle et morale des îles Antilles* 186.

latin. Personnage de première importance dans le milieu danois, il est particulièrement lié, par ses intérêts académiques autant que familiaux, à l'illustre famille des Bartholin¹¹. Il est le beau-frère de Caspar Bartholin (1585-1629), célèbre professeur de médecine qui publie dès 1628 un traité sur la licorne¹². Le fils de Caspar, Thomas Bartholin (1616-1680), fait à son tour des études de médecine, en visitant notamment le théâtre anatomique de Leyde, les jardins botaniques de Padoue et de Montpellier, ainsi que les savants romains et napolitains. À la mort de son père Caspar, il est recueilli et élevé par son oncle Ole Worm. Devenu professeur de médecine, Thomas Bartholin écrit, après son père, un nouveau traité sur la licorne qui connaîtra deux éditions, en 1645 et 1678¹³, dans des circonstances sur lesquelles nous reviendrons. Ajoutons enfin qu'Ole Worm possède une collection de curiosités dont la majeure partie est revenue après sa mort à la couronne du Danemark. Le frontispice du catalogue posthume (1655) montre une pièce remplie d'objets bien classés [Fig. 5.1]¹⁴. Les productions naturelles y tiennent une place prépondérante, avec de nombreux spécimens zoologiques, minéraux et botaniques ; l'homme possède aussi des artefacts issus de la culture des pays du Nord, Laponie et Groenland notamment, pour laquelle il se passionne : des costumes traditionnels, un kayak, des objets rituels recouverts d'inscriptions runiques, rendent cette collection remarquable.

Si les commerçants profitent de la confusion et de l'aura de la fable, chez les savants le doute commence à s'installer à la lecture des premiers récits de voyages vers le Nord qui paraissent à la fin du XVI^e siècle. Les navigateurs sont nombreux à cette époque, en particulier les Anglais et les Hollandais, à s'intéresser aux côtes du Groenland, soit pour y chercher de nouveaux lieux de commerce et de pêche, soit dans l'objectif de découvrir le fameux passage du Nord-Ouest qui permettra de rejoindre les Indes par la voie maritime. Mais seules certaines côtes occidentales du Groenland sont connues. Cette terre est considérée comme pouvant être une extrémité de la Laponie, du Canada ou de la Russie.

11 Sur le rôle des Bartholin, voir Roling B., "Der Wal als Schauobjekt : Thomas Bartholin (1616-1680), die dänische Nation und das Ende der Einhörner", in Enenkel K.A.E. – Smith P.J. (éds.) *Zoology in Early Modern Culture* (Leyde – Boston : 2014) 172-196.

12 Bartholin Caspar, *Opuscula quatuor singularia, I. De Unicornu* (Copenhague, Georg Hanzschius : 1628).

13 Bartholin Thomas, *De unicornu observationes novae. accesserunt de aureo cornu CL. V. Olai Wormii eruditorum judicia* (Padua, Iulio Crivelli : 1645), et Bartholin Thomas, *De unicornu observationes novae, secunda editione* (Amsterdam, Henricus Wetstenius : 1678).

14 Worm Ole, *Museum Wormianum, seu historia rerum rariorum* (Leyde, Leyde, Jean, Louis et Daniel Elzevir : 1655).

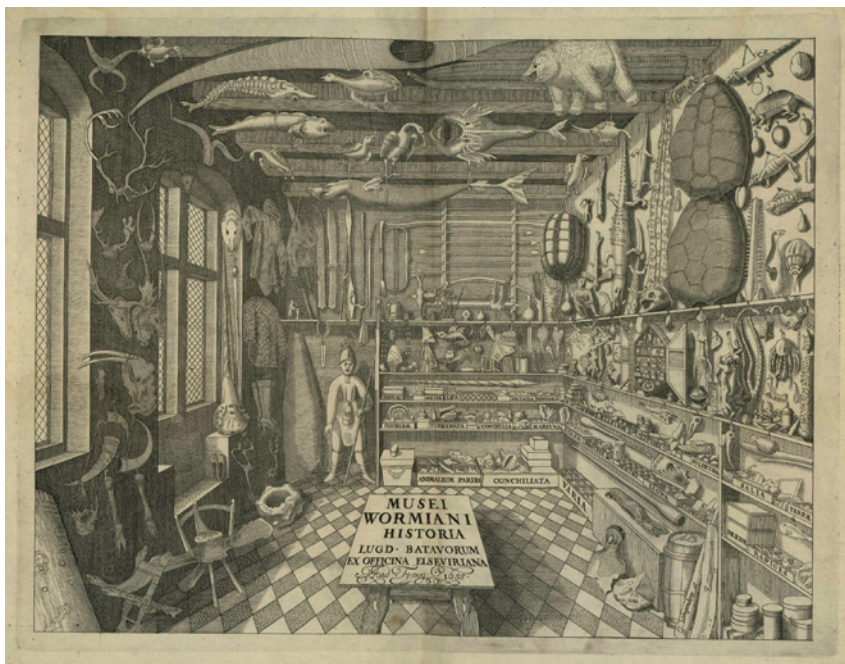


FIGURE 5.1 Worm Ole, *Museum Wormianum, seu Historia rerum rariorum* (Leyde, Jean, Louis et Daniel Elzevir : 1655) frontispice. D.R.

Dès 1578, un rapport sur les explorations menées en 1577 par le navigateur anglais Martin Frobisher est traduit en français. Il indique notamment que des cornes de licornes ont été aperçues sur la banquise. Le récit dit qu'à peine revenus sur le pont du navire, les marins se livrent à l'essai des vertus de la corne, en jetant contre elle des animaux venimeux – ici, des araignées – qui mourront si la corne est bien authentique :

Nous trouvasmes en ce rivage de west, un poisson mort, et portoit sur son museau une corne droicte, de la longueur d'une aulne et demie, qui estoit creuse, et rompue par le bout. Aulcuns de nos mariniers jetterent dedans ceste corne des araignées, qui moururent incontinent : c'estoit à nostre jugement la Licorne de mer. Et de fait, nous avons depuis expérimenté, qu'elle a la mesme vertu et proprieté que celle de la Licorne¹⁵.

15 Frobisher Martin, *La navigation du capitaine Martin Frobisher [...]* (Genève, Antoine Chuppin : 1578) sign. Ciiij. Cette traduction en français est réalisée par Nicolas Pithou seulement un an après la première parution du récit du second voyage de Frobisher publié en anglais par l'un des membres de l'équipage, Settle Dionyse, *A true reporte of the last*

La précision du texte montre qu'il s'agit d'un poisson mort qui porte 'sur son museau' une 'corne droite'. C'est là peut-être l'une des premières mentions d'un *poisson* portant corne et baptisé 'Licorne de mer'. Elle est suffisamment exceptionnelle pour que la reine Elisabeth I achète cette corne à Frobisher pour une somme de dix mille livres¹⁶.

Vingt ans plus tôt, Olaus Magnus¹⁷ avait bien inclus dans son bestiaire des mers de Norvège des poissons gros comme des éléphants, appelés 'Rosmar' ou 'Mors', armés d'appendices géants qu'il appelle des 'dents' et dont il précise qu'elles sont considérées comme fort précieuses :

[...] au pays des Scythes, Moschovites, Rutheniens, et Tartares (comme est l'ivoire aux Indes) pour leur durté, blancheur et pesanteur, et en fait on des poignes de dagues, et épées fort belles et excellentes. Ce que temoigne être vrai Miechovite historien en sa Sarmatie, et Paul Jove disant l'avoir aprins d'un Demetrius envoyé en ambassade vers le Pape Clement, par le grand Duc des Moschovites¹⁸.

Cependant il les distingue du 'Monoceros', un autre monstre marin pourvu quant à lui d'une très grande 'corne' sur le 'front'¹⁹. Pierre Belon, qui publie la même année 1555 ses *Observations*, considère que ce qu'on vend pour la corne de l'une est souvent la dent de l'autre, et dénonce l'imposture avant même Ambroise Paré :

voyage into the west and northwest regions (Londres, Henry Middleton : 1577). La version anglaise de ce passage se trouve dans l'édition originale (sign. Bviii), et transcrite dans l'édition moderne, *The Three Voyages of Martin Frobisher*, éd. McCaskill E. – Stefansson V. (Londres : 1938) t.11, p.16. Pour les différentes éditions et traductions des navigations de Frobisher, on se reportera à l'Appendice 3 de cette même édition 226 sq.

16 Voir Marsh C. – Ventura V., *Unicornicopia. Magical Creatures* (Londres : 2012) 57. Pour l'effondrement de ce prix en 1641, voir aussi Faidutti B., *Images et connaissance de la licorne (Fin du Moyen Âge-XIX^e siècle)*, t.1, Paris, thèse de doctorat de l'université Paris-XII (Sciences littéraires et humaines) 345 ; 30 novembre 1996, disponible en ligne <http://www.faidutti.com/unicorn/unicorn.htm>.

17 Magnus Olaus, *Historia de gentibus septentrionalibus* (Rome, Giovanni Maria Viotti : 1555), le livre XXI en particulier traite des animaux marins.

18 Magnus Olaus, *Historia de gentibus septentrionalibus*, livre XXI, chap. 28, p. 757 "De Rosmaro, sive Morso Norvagico". Nous citons ici la traduction française parue en 1561 : *Histoire des pays septentrionaux* (Paris, Martin le Jeune : 1561) fols. 252v-253.

19 Magnus Olaus, *Historia de gentibus septentrionalibus*, livre XXI, chap. 14 "De Xiphia, Monocerote et Serra" : 'Monoceros est monstrum marinum, habens in fronte cornum maximum' (744).

Quel auteur ancien, Grec ou Latin, avons-nous, qui face foy, qu'une petite piece de chose incogneue, et que savons estre souvent de dent de Rohart, doive valoir trois cents ducats ? Lon nous a monstré des morceaux, pour sçavoir si la cognoissions, qu'on avoit acheptez pour Licorne au pris, à la valeur de trois cents ducats, qui toutesfois estoient rouelles de dents de Rohart²⁰.

Belon est sans doute le premier à reconnaître dans les rondelles qu'on lui présente comme des cornes de licorne des tronçons de 'dent de Rohart', et à s'indigner de leur prix exorbitant ; mais il ne développe pas, et se contente de démentir la dénomination de licorne pour lui préférer celle de morse – il est vrai qu'il n'a vu que des fragments de ces prétendues cornes. Ni Olaus Magnus, ni Pierre Belon ne concluent à la possibilité d'une licorne 'de mer' : le syntagme semble inimaginable en 1555. Ce n'est que vingt-deux ans plus tard, quand Martin Frobisher voit une corne certes brisée, mais qui mesure tout de même une aulne et demie (soit près de deux mètres) et quand il voit qu'elle est attachée au 'museau' d'un poisson mort, qu'il conclut : 'c'estoit à nostre jugement la Licorne de mer'. Ce témoignage est contemporain de celui d'André Thevet qui décrit en 1575 l'Uletif et le Caspilly, deux grands poissons dont les cornes sont comparées à 'la corne que nous appellons pardeça de Licorne'²¹. Prenant à témoin le texte de Thevet, A. Paré, qui témoigne avoir en sa possession une corne du 'poisson' Uletif, légende l'illustration correspondante en 1582 par l'expression 'Figure du poisson nommé Uletif, espece de Licorne de mer', et emploie à son sujet dans le texte descriptif les mots 'licorne marine' :

Plusieurs estiment ledit animal estre une Licorne marine, et s'en servent contre les morsures et picqueures de bestes venimeuses, comme l'on faict de la corne de Licorne²².

Paré est suivi dans cette dénomination par l'apothicaire de Montpellier Laurent Catelan (1568 ?-1647), qui se réfère à lui et à Olaus Magnus pour désigner les animaux cornus – sous prétexte qu'ils vivent dans l'eau – du nom de

20 Belon du Mans Pierre, *Les Observations de plusieurs singularitez et choses mémorables, trouvées en Grèce, Asie, Judée, Egypte, Arabie et autres pays étranges* (Anvers, Christophe Plantin : 1555), livre I, chap. XIII, 15.

21 Thevet André, *Cosmographie universelle* (Paris, Guillaume Chaudière : 1575), t. 1, livre V, respectivement chap. XII, fol. 147 ('Uletif') et chap. II, fol. 124 pour le passage cité (Caspilly).

22 Paré, *Discours de la momie*, chap. XIII, fols. 29r-30r-v.

'Lycorne marine'²³. L'appellation semble tout à fait adoptée lorsque Rochefort décrit dans son texte de 1658 une 'Licorne de mer' échouée, citée plus haut, et qu'il l'identifie comme une de ces 'Licornes de la mer du nord'²⁴.

Ces dénominations qui s'installent organisent cependant une forme de confusion, car elles désignent des poissons à cornes qui ne se ressemblent pas. La corne d'Uletif que décrit Paré, avec ses cinquante-et-une dents, ressemble plus à une scie qu'à une belle torsade. Or c'est à sa suite que les auteurs suivants adoptent l'expression *licorne de mer*. Le mot latin *cornu*, dont l'extension sémantique est plus large que son équivalent français *corne*, est employé pour évoquer toutes sortes d'appendices, ce qui entretient la confusion. Peu discriminant, il ne saurait suffire à identifier la licorne, ayant fréquemment pour équivalent 'dent', ou 'langue'. À cet égard, la description que fait Pierre Belon de la 'Scie de mer' montre que les marchands, agents linguistiques importants dans la transmission des mots, vendent cette scie, la seule partie du poisson dont ils ont connaissance, en la nommant 'langue' alors que lui-même serait plutôt tenté de l'appeler 'corne' :

comme une grande corne longue de trois coubdees, et large de pied et demy, et [les marchands] afferment qu'elle est attachee au front de ce grand poisson. [...] Les marchands l'ont appelee Langue de Serpent, pource qu'ils tiennent qu'elle porte medecine. Somme lon en tient grand compte en plusieurs endroits²⁵.

Tandis qu'un lucratif commerce de cornes en tous genres se met en place, les traités se multiplient pour essayer de comprendre plus précisément ce dont il est question²⁶.

23 Catelan Laurent, *Histoire de la nature, chasse, vertus, proprietz et usage de la licorne* (Montpellier, Jean Pech : 1624) 5. Mais en adoptant ce syntagme, il associe assez librement deux animaux distincts présents chez deux auteurs distincts ; il dit vouloir unifier ainsi par un terme fédérateur des noms empruntés à des langues différentes : 'Paré, après Olaus magnus recite qu'es régions Septentrionales il s'y trouve un Monocerot ou Unicorn marin qu'on appelle Uletif en la langue de ces contrées' (Idem, 4).

24 Rochefort, *Histoire naturelle et morale des îles Antilles de l'Amerique* 184 et 189.

25 Belon du Mans Pierre, *La nature et diversité des poissons* (Paris, Charles Estienne : 1555), livre I, 58.

26 Voir entre autres Bacci Andrea, *Discorso dell'alicorno* (Florence, Giorgio Marescotti : 1573) ; Paré, *Discours de la momie* (1582) ; Catelan, *Histoire de la nature* (1624) ; Caspar et Thomas Bartholin (1628, 1645, 1678).

Toutefois, en 1613, le doute reste encore entier lorsque est publiée à Amsterdam une *Histoire du pays nommé Spitsberghe*²⁷ attribuée à Hessel Gerritsz (1581-1632), dans laquelle est rapporté le journal de Guillaume Bernard, alors capitaine d'un vaisseau armé par les seigneurs d'Amsterdam pour trouver un passage vers la Chine. Les navigateurs s'aident d'une carte des côtes du Spitzberg établie par une expédition anglaise de 1612, sur laquelle une baie porte le nom 'Hornfond, ainssi appelé des Angloys, a cause qu'il y ont trouvé (comme ils racontent) un licorne'²⁸. Au sujet des prétendues licornes, le texte de Gerritsz exprime surtout son scepticisme :

Il nous reste encore à parler des Cornes de Licorne, que les Anglois ont trouvé en l'Horenfond. Duquel *ne scavons dire* autre chose, sinon que ceux qui en ont cognoissance disent que ce sont *vrayes* Cornes de Licornes, desquelles en a esté apporté l'esté passé une en ces Pays par un de nos Mariniers. Mais *on ne saict pour vray* de quels animaux elles viennent. (nous soulignons)²⁹

Deux éléments essentiels sont à retenir ici, d'une part l'apparition dans ce type de récit d'un doute associé aux catégories du savoir et du vrai ('nous ne scavons dire' / 'on ne saict pour vray'), qui laisse supposer que le narrateur considère que sont enfin identifiées les 'vrayes' cornes de licornes, et que les licornes pourraient bien être des poissons. D'autre part un tel texte impose en langue française la diffusion d'une enquête menée par des marins d'Amsterdam qui procèdent en critiquant les nomenclatures issues des témoignages anglais. Ce sont des mots qui sont au centre du débat, car ce sont eux qui sont gages de crédibilité.

2 Émerveillements savants et choix de la nomenclature : l'apparition du narval

À partir de ce moment, c'est au Danemark que les choses se précisent, autour d'Ole Worm, ce savant dont la renommée et l'influence scientifique sont

27 Sorte de pamphlet anti-anglais, paru sous initiales de nom d'auteur (H.G.A.). Le titre est éloquent : *Histoire du pays nommé Spitsberghe [...] La triste racompte des maux, que noz Pecheurs, tant Basques que Flamens, ont eu a souffrir des Anglois, en l'esté passée. [...] Et en après une Protestation contre les Angloys, et annulation de tous leurs frivoles arguments, parquoy ils pensent avoir droict, pour se faire Maistre tout seul, dudict Pays* (Amsterdam, à l'ensieigne du Carte nautique : 1613).

28 Idem 15.

29 Idem 17.

déterminantes. Il a lu le traité de son beau-frère et confrère Caspar Bartholin, paru en 1628. L'auteur y établissait que, de tous les animaux portant corne, seul un poisson, qu'il nommait l'*'unicornum marinum boreale'*³⁰ était à même de fournir cette corne appelée 'de licorne' ; il précisait que l'animal vivait principalement en Islande et au Groenland, et il décrivait sa 'corne' comme très droite, longue de plusieurs coudées, très dure, lourde, blanche à l'intérieur, marquée de profondes stries. Il certifiait en avoir vu de pareilles dans différentes collections européennes, parmi les plus prestigieuses, qu'il nommait ; il déclarait enfin que ces objets n'étaient pas rares, qu'on pouvait en trouver couramment en Norvège – celles du grand électeur de Saxe à Dresde auraient été offertes par la couronne norvégienne. Systématiquement, Caspar Bartholin emploie dans son traité le mot 'corne' pour parler de ces objets, et révèle que celles qu'on trouve dans les collections anglaises ont été rapportées d'Islande. En somme, il ne dit pas que ce sont les 'vraies', mais dément l'opinion selon laquelle ces cornes dites de licorne proviendraient d'un autre animal que d'un animal marin, et d'une autre région que du nord de l'Europe. Il établit ainsi deux éléments essentiels : leur origine géographique et zoologique.

Quelques années plus tard, en 1636, Ole Worm, qui voit arriver au Danemark beaucoup de ces cornes fameuses, revendues dans toute l'Europe en tant que cornes de licornes, et qui en possède lui-même deux, finit par vouloir identifier clairement la nature de l'animal qui les porte. Il en parle à son ami le chancelier Christian Fris, en regrettant que les marins manquent à ce point de curiosité qu'ils ne songent pas à rapporter l'animal avec sa corne. Le chancelier le détrompe, car il possède chez lui une dépouille rapportée du détroit de Davis par des marchands danois, et il invite le savant à venir la contempler. Ole Worm lui rend visite, et voit effectivement ce qu'avait déjà décrit Frobisher en son temps : 'un grand crâne sec, ou estoit attaché un tronçon de cette sorte de corne, long de quatre pieds' (soit environ 1,30 m)³¹. Certes Ole Worm est un homme de science, mais chez le naturaliste c'est le sentiment d'émerveillement qui l'emporte d'abord. Au souvenir de ce moment, il écrit 'Je fus saisi de joie de tenir une chose si precieuse entre mes mains' ; et : 'il me fut d'abord impossible de comprendre ce que c'était'. Cette perplexité sidérée par la force de l'inédit est à l'origine du désir de savoir, de la curiosité qui suscite une observation plus précise d'où viendra une nouvelle connaissance. Il demande à la rapporter chez lui, afin de l'étudier tout à loisir, et voici la description qu'il en fait :

30 Bartholin Caspar (1628) fol. 7v.

31 Voir, pour cet extrait et les suivants, la lettre écrite par Ole Worm, et rapportée par Isaac de La Peyrère dans sa *Relation du Groenland* (Paris, Augustin Courbé : 1647) 68 et suivantes ; le même récit, plus détaillé par Ole Worm, est à lire dans le *Museum Wormianum* 282-285.

Je trouvay que ce crane ressembloit proprement à celui d'une teste de Balene, qu'il avoit deux trous au sommet, et que ces trous perçoient dans le palais : Que c'estoient sans doute les deux tuyaux, par lesquels cette beste rejettoit l'eau qu'elle beuvoit. Et je remarquay que ce que l'on appelloit sa Corne, estoit fiché à la partie gauche de sa machoire de dessus.

L'observation et sa formulation sont déterminantes : sa corne, ou plutôt, 'ce que l'on *appeloit* sa Corne', à savoir cette partie désormais désignée à l'imparfait pour marquer le doute quant à la validité de la dénomination, s'avère être fixée en réalité au côté gauche de la *mâchoire* de l'animal. Ole Worm a tôt fait de comprendre qu'alors, il faut plutôt parler d'une *dent*. Ce que l'on vend en tant que corne de licorne n'est donc pas une corne, et n'est pas non plus de licorne (au sens d'animal terrestre quadrupède) mais s'apparente à une dent qui viendrait bel et bien d'un poisson dont la ressemblance avec une 'teste de Balene' le frappe d'emblée – et qui n'a donc rien du cheval.

On voit ici quelle part importante tiennent la discussion, l'observation raisonnée, la lecture des récits de voyage, l'échange épistolaire, dans la mise en évidence progressive d'une nouvelle vérité pour le collectionneur. Le lieu en tant que tel, le cabinet de curiosités, qui fut celui de l'observation réfléchie, va pouvoir à présent jouer son rôle dans la diffusion et la publication de cette découverte.

Ce qui se passe ensuite chez Ole Worm est en effet capital. Il va employer ce lieu pour réunir une communauté savante qui assurera la diffusion de ces connaissances nouvelles dans toute l'Europe. Quand il comprend que l'animal est un poisson, il commence par inviter ses meilleurs étudiants et ses amis les plus savants à venir contempler la preuve visuelle de la merveille dans son cabinet – Ole Worm, comme Ulisse Aldrovandi à Bologne³², concevait son cabinet de curiosités comme un lieu d'étude et d'observation, où il rassemblait fréquemment des étudiants après ses cours.

Je conviai mes amis les plus curieux, et les meilleurs Escoliers de mon auditoire, de venir veoir cette rareté dans mon cabinet. Un peintre que j'avois appelé, s'y estoit rendu : Et je fis tirer en presence des assistans, un portrait de ce crane avec sa corne, tel qu'il estoit, de figure, et de grandeur : afin qu'ils peussent estre tesmoins, que ma copie avoit esté prise

32 Voir à ce propos l'article de Boutroue M.-E., "Le cabinet d'Ulisse Aldrovandi et la construction du savoir", in Martin P. – Moncond'huy D. (éds.), *Curiosité et cabinets de curiosités* (Paris : 2004) 43-63, et disponible en ligne sur le site *curiositas*, à l'adresse <http://curiositas.org/le-cabinet-dulisse-aldrovandi-et-la-construction-du-savoir>.

sur un véritable original. [...] C'estoit en effet le portrait d'un véritable poisson, qui ressembloit à une Balene³³.

Notons la présence de ce peintre, appelé spécialement pour représenter le spécimen en présence de spectateurs dignes de foi, afin que nul ne puisse considérer que le dessin serait pure invention. À cette précaution, on peut trouver deux raisons : la première, c'est que la découverte est telle, qu'elle est presque invraisemblable, et si déconcertante que l'on serait tenté de croire que ce n'est pas la vérité. Des témoins, appelés à voir l'animal autant qu'à vérifier que le peintre exécute bien son dessin sur le modèle, sont donc indispensables pour confirmer la véracité de l'événement. La seconde raison tient à l'importance, dans la méthode scientifique issue de la Renaissance, de l'autopsie (voir par soi-même) ou observation directe, méthode appelée à compléter systématiquement les connaissances livresques : ici chacun est invité à voir par lui-même et le spécimen, et le peintre en train de le représenter. La présence d'un public averti au regard exigeant *et* d'un peintre montre à quel point la découverte est décisive pour le savant, et combien le cabinet de curiosités joue un rôle central dans la mise en évidence du savoir nouveau par l'exhibition de cette scène. De fait, les dessins réalisés ce jour-là (face, profil, dessous du crâne ...) figureront non seulement dans le *Museum Wormianum* de 1655 [Figs. 5.3, 5.4, 5.5]³⁴ et sur un détail du frontispice dans la présentation du cabinet de Worm [Fig. 5.2], mais encore seront repris dans beaucoup d'autres publications des années 1640-1650 [Fig. 5.6]³⁵.

L'événement scientifique est rapporté par un Français qui n'est pas pour rien dans ce réseau savant, Isaac de La Peyrère, à qui La Mothe Le Vayer a commandé un ouvrage sur les pays du Nord. La Peyrère accompagne donc l'Ambassadeur de France au Danemark afin d'y rassembler suffisamment d'éléments pour remplir la *Relation du Groenland* qui paraît en 1647. C'est à cette occasion, alors qu'il circule dans les cercles savants, qu'il fait la connaissance d'Ole Worm, lequel lui raconte sa découverte dans une lettre, et le convie lui aussi à venir voir

33 Worm, *Museum Wormianum* 70-71.

34 Ibidem 282-285.

35 Ces images circulent partout en Europe et pendant tout le siècle dans les publications consacrées à la licorne : dès 1645 dans l'ouvrage du neveu d'Ole Worm, Thomas Bartholin, *De unicornu* (1645) 112, que Worm a chargé de diffuser ses nouvelles découvertes. On retrouvera encore le groupe caractéristique des trois gravures dans *Relation du Groenland* (n. p., après la page 144). En 1650, Levinus Hultzius reprend pour ses planches les mêmes vues de face, haut, profil du crâne de narval (Lievin Hulst, dit Levinus, *Die XXVI. Schiff-Fahrt : Beschreibung einer [...] Reyse durch [...] Johann Müncken inn Jahren 1619. und 1620. verrichtet* [...] (Francfort sur le Main, Christophe Le Blonq : 1650).



FIGURE 5.2 Worm Ole, *Museum Wormianum, seu Historia rerum rariorum* (Leyde, Jean, Louis et Daniel Elzevir : 1655), détail du frontispice. D.R.

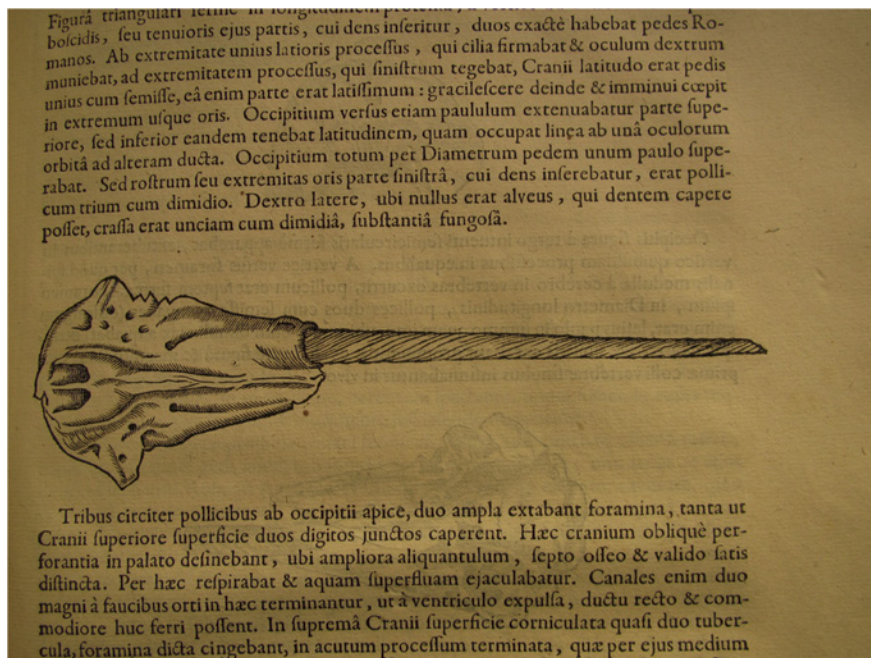


FIGURE 5.3 Unicorn horn with skull. Worm Ole, *Museum Wormianum, seu Historia rerum rariorum* (Leyde, Jean, Louis et Daniel Elzevir : 1655) 283. D.R.

les dessins et l'animal dans son cabinet. À cet effet, il a disposé le crâne avec sa dent sur une table, afin que le visiteur puisse l'observer sous tous les angles :

il ne se contenta pas de me faire voir les portraits de ces poissons : il me mena dans son cabinet, où je vy sur une table, dressée pour cela, l'original et le crane mesme, avec la corne de cette beste, que M. le Chancelier Fris, luy avoit autrefois confiée³⁶.

La Peyrère est alors tellement émerveillé par ce qu'il voit ('Je vous avoüe, que je ne me pûs lasser d'admirer une curiosité si exquise')³⁷ qu'il incite l'Ambassadeur à se rendre lui-même dans le cabinet de curiosités – décidément lieu de visite et de révélation. Celui-ci, séduit à son tour, demande la permission

36 La Peyrère, *Relation du Groenland* 72.

37 Ibidem 72

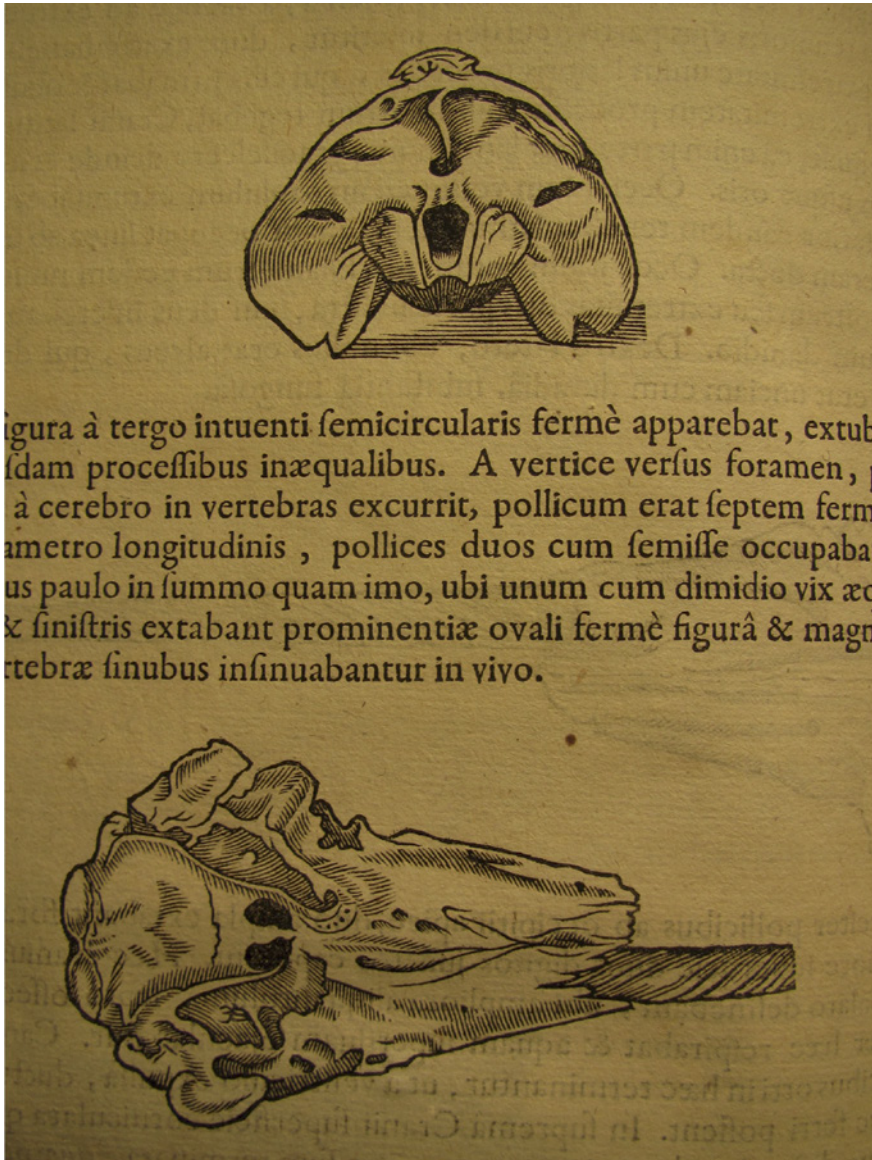


FIGURE 5.4 Unicorn skull (two sides). Worm Ole, *Museum Wormianum, seu Historia rerum rariorum* (Leyde, Jean, Louis et Daniel Elzevir : 1655) 284. D.R.

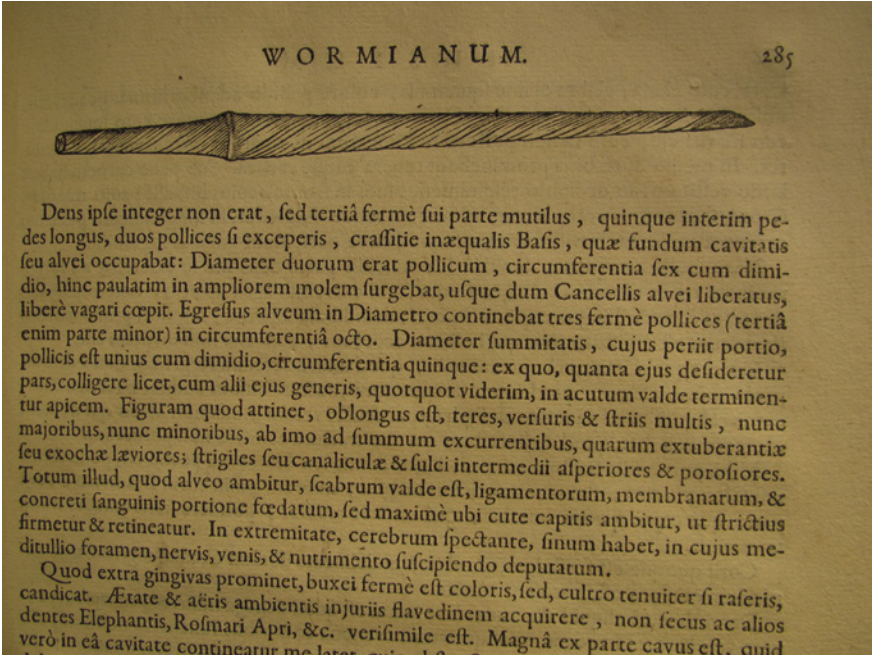


FIGURE 5.5 Unicorn horn without skull. Worm Ole, *Museum Wormianum, seu Historia rerum rariorum* (Leyde, Jean, Louis et Daniel Elzevir : 1655) 285. D.R.



FIGURE 5.6 Narwal, sauvages, bateau. La Peyrère Isaac de, *Relation du Groenland* (Paris, Augustin Courbé : 1647) n.p. Bibliothèque nationale de France, Gallica

d'emporter le spécimen pour en faire dresser un dessin afin de le montrer au roi de France à son retour :

Je vous advoüe, que je ne me pûs lasser d'admirer une curiosité si exquise, et l'ayant rapportée à Monsieur l'Ambassadeur, il la voulut voir dans le mesme cabinet. Son Excellence considera cette rareté avec plaisir, et pria M. Vormius de la luy prester, pour en avoir une exacte peinture, laquelle il a fait faire, et qu'il emporte à Paris³⁸.

Notre Français est un bon indicateur des réactions de l'époque : bien qu'il soit familier des milieux savants, il reste incrédule, en particulier parce qu'il comprend rapidement à quel point cette découverte va bouleverser les représentations mentales de l'époque. Elle contredit à la fois toutes les autorités livresques, Pline et Elien d'un côté, la Bible de l'autre, rien de moins :

Je vous diray que j'ay eu de grands disputes avec luy, [...] parce que cela renverse l'opinion de tous les anciens Naturalistes, qui ont traité des Licornes, et nous les ont dépeintes Terrestres, et à quatre pieds : et que cela choque quantité de passages de l'Escriture Sainte, qui ne peuvent estre entendus que des Licornes à quatre piedz³⁹.

Cependant, 'ma curiosité ne s'arrêta pas là', dit Ole Worm. S'il a mis en évidence la réalité marine de l'animal, et en a assuré la diffusion par des invitations et des représentations visuelles, la constitution du savoir passe aussi par la nomenclature. Martin Frobisher avait nommé l'animal 'Licorne de mer' (*sea unicorn*), Paré également, et les autres auteurs français à sa suite. Caspar Bartholin avait à son tour adopté la traduction latine exacte *unicornum marinum*, et après lui La Peyrère lui-même, quand il se demande comment désigner l'animal en français :

Je poserois donc une espece d'Unicornes marins, comme l'on a posé des espèces de chiens, de veaux, et des loups marins. Et la chose ne seroit pas nouvelle, puis que Bartholin, Auteur Danois, a fait un Chapitre exprès, des Unicornes marins, dans son traité des Unicornes⁴⁰.

38 La Peyrère, *Relation du Groenland* 72-73.

39 Ibidem 66

40 Ibidem 77.

Cependant, la formation du syntagme telle qu'elle est explicitée par La Peyrère exprime clairement que ce choix résulte d'une transposition, puisqu'il forme 'unicorne marin' sur le modèle de 'loup marin', c'est-à-dire en gardant en tête le spécimen terrestre du loup ou de l'unicorne⁴¹. Mais il semble que pour Ole Worm, il soit désormais important d'être plus discriminant ; si le mot 'corne' lui-même est devenu impropre, le terme '*Unicorne*' l'est à plus forte raison et doit être modifié. Le professeur de Copenhague va se tourner vers son réseau savant, en demandant à l'un de ses anciens étudiants, Thorlac Scalonius, alors évêque de Hole, en Islande, comment se nomment les poissons similaires qui ont pu être observés sur les rivages où il réside. L'homme d'église lui répond en lui envoyant le dessin de l'animal, ainsi que le nom local qu'on lui donne en Islande, *Narhual*, et son explication :

Ma curiosité ne s'arresta pas là. Ayant eu avis qu'un semblable animal avoit esté porté, et pris en Islande, j'escrivis à l'Evesque de Hole, nommé *Thorlac Scalonius*, qui a esté autrefois mon disciple à Copenhague ; et le priay, comme mon amy, de m'envoyer le portrait de ceste beste ; ce qu'il fit, et me manda que les Islandois l'appelloient *Narhual*, comme qui diroit, Balene qui se nourrit de cadavres ; parce que *Hual*, signifie une Balene, et que, *Nar*, signifie un cadavre⁴².

Or, s'il s'agit de choisir un nom plus précis fondé sur un savoir issu de l'autopsie d'une communauté d'experts, pourquoi se fier à un nom en dialecte (et non en latin) qui indique des habitudes alimentaires de charognard non vérifiées par les savants ? On se souvient que la description de Worm insistait sur le fait que cette rareté dessinée par le peintre révélait 'le portrait d'un véritable poisson, qui ressembloit à une Balene'. De fait, si *Hual* signifie Baleine, ce nom, même venu du vernaculaire islandais, lui semble sans doute plus conforme à l'apparence de baleine vérifiée publiquement par l'autopsie. Il s'agit surtout d'abandonner le nom de licorne, afin de confirmer définitivement que l'animal ne

41 Selon cette croyance ancienne, déjà posée par Pline dans le livre IX de *l'Histoire naturelle*, et rapportée régulièrement, il y aurait une équivalence entre la mer et le reste du monde pour les espèces végétales et animales. Le fait qu'Adam n'ait pas nommé les poissons mais seulement les animaux terrestres et les oiseaux (*Genèse* 2 : 19-20) renforce l'idée, dans l'ichtyologie de la Renaissance, que les animaux marins ne peuvent être que des reflets linguistiques des espèces terrestres et volantes : 'La mer a tout ainsi que l'element voisin', dit Du Bartas dans la *Semaine ou Creation du Monde*, éd. J. Céard (Paris : 2011), t. 1, 5^e jour, 259-260, v.37-43), 'Elle a son herisson, son belier, son pourceau / Son lion, son cheval, son éléphant, son veau. / Elle a même son homme' – alors pourquoi pas sa licorne ?

42 Worm, *Museum Wormianum* 70-71.

ressemble pas au cheval légendaire. Le nom de licorne de mer, faisant trop directement allusion à la licorne terrestre, et donc à la fiction, n'est plus de mise dans un vocabulaire qui se veut le produit de l'observation. Le mot *Narhual*, pour qui connaît son sens, soulignera beaucoup plus efficacement la spécificité visible de la bête, désormais mise en évidence par l'expérience. Insistons brièvement sur le choix de ce mot, qui n'est en fait pas nouveau. Il est déjà attesté à des époques bien antérieures sous la forme *Nahual*, dès le *Theatrum Orbis Terrarum* d'Abraham Ortelius (1570) dans le texte qui décrit la carte de l'Islande remplie de monstres marins. L'ouvrage, treize fois édité en français entre 1572 et 1602, a fait largement connaître ce mot *Nahual* :

C'est un poisson nommé Nahual, si quelqu'un mange de ce poisson, il meure incontinent. Il a un dent sur le devant de la longueur de sept coudées : aucuns l'ont vendu pour corne de licorne ; et est bon contre le venin. Ce poisson a quarante aulnes de long⁴³.

La description du monstre est reconduite à l'identique avec son nom étrange, quand le cartographe néerlandais Jodocus Hondius publie une nouvelle édition de *l'Atlas* de Mercator en 1607, laquelle sera traduite en français par La Popelinière en 1609 puis 1613 sous le titre *Méditations cosmographiques de la fabrique du monde* :

Le temps me faudroit, si je voulois reciter au menu le nombre de tant de poissons. Je ne mentionneray que les plus rares. Entre lesquels est le Nahual. Sa chair fait soudain mourir celui qui en mange. Et a une dent qui avance de sept coudées sur l'inférieure partie de la teste. Aucuns sont vendu pour corne de Monoceros, et croit on qu'elle resiste aux venins. Cette bestiasse a 40 aunes de longueur⁴⁴.

Nahual est repris d'une édition à l'autre mais à chaque fois le nom est donné comme pittoresque, indigène, arbitraire. Ole Worm fait autre chose. Il lui restitue un 'r' qu'il justifie étymologiquement par le sens de *Nar*, cadavre, ce qui apporte à l'idiome étranger une légitimité qui permettra de l'adopter, légitimité

43 Selon l'étude lexicologique systématique menée par Skårup P. – Arvellier R., "Le mot français narval", *Revue Romane* 10. 2 (1975) 281-292, c'est là sans doute la première attestation du mot en français, dans ce texte de la traduction de 1598 : *Le Theatre de l'Univers* (Anvers : C. Plantin, 1598). Cette description traduit mot pour mot le texte latin de l'édition originale sans doute dû à un Islandais. L'article cite également le passage de La Popelinière.

44 La Popelinière Lancelot Voisin de, *Méditations cosmographiques de la fabrique du monde* (Amsterdam, Jodocus Hondius : 1609) 43 (cité par Skårup – Arvellier, 'Le mot français narval' 283).

justifiée par ailleurs comme on l'a vu par l'autopsie (*Hual*, baleine) et la *publica disputatio* des savants qui s'en est ensuivie⁴⁵. Ce nom lointain remotivé par un sens étymologique et une observation précise est transmis avec cette aura savante dans la langue française : c'est comme tel qu'il est attesté pour la première fois dans le texte de La Peyrère de 1647, d'après la dissertation de Worm de 1638. Le mot *Narhual* inconnu des Danois et à plus forte raison des Français s'impose en dépit de son origine vernaculaire comme un nom rare et véritablement savant⁴⁶. L'espèce se distingue ainsi définitivement, et du vieux mot de 'Licorne', et de ce 'Rohart', 'Rosmar' ou 'Mors' d'abord confondu avec elle au milieu du XVI^e siècle. C'est bien à l'initiative d'Ole Worm qu'un nom approprié, issu, comme la bête qu'il désigne, des régions polaires, est donné à cette nouvelle espèce : une terminologie inédite circule en même temps que l'apparence renouvelée de la bête, comme pour s'y adapter au mieux – un nom insolite pour un animal résolument étonnant.

La correspondance d'Ole Worm permet de comprendre comment circulent les connaissances. Les lettres qu'il échange en particulier avec Thomas Bartholin montrent à quel point il choisit cet homme, son neveu, pour publier ses découvertes⁴⁷. Le destinataire prend cette charge comme un honneur et rend en retour un vif hommage à Ole Worm dans la rédaction de son traité⁴⁸. Il faut également lire le *Museum Wormianum* pour se rendre compte de la méthode par laquelle il établit cette découverte scientifique, puisque s'y trouvent racontés tous les échanges entre savants (*disputari inter doctos*) ayant rendu possible la mise en évidence de la vérité⁴⁹. Ole Worm n'est pas un simple collectionneur, il confère à sa collection une vocation scientifique, afin de construire grâce à elle un savoir. Ainsi, le nom de *Narhual* restera dans les nomenclatures. En français, il entre dans le dictionnaire de Furetière en 1690, puis de Trévoux en 1752 sous la forme *Narwal*. Adam Olearius, lorsqu'il constitue un lexique groenlandais, risque bien le terme 'Towak', mais ce mot n'aura pas d'avenir⁵⁰.

45 Termes employés par Worm dans sa correspondance (*Olai Wormii et ad eum doctorum virorum Epistolae*, 2^{ème} éd. (Copenhague, s.n. : 1751 [1^{ère} éd. 1728]) 924.

46 Thomas Bartholin signale cependant que le mot *Narhval* est connu des navigateurs anglais depuis 1616 : Bartholin, *De unicornu* (1678) 118.

47 Worm, *Epistolae* t. II, 117-122 (lettres du mois de juin 1642).

48 Dès 1645, le sous-titre du traité de la licorne précisait : 'Accesserunt de Aureo Cornu CL. V. Olai Wormii Eruditorum Judicia'. Dans le texte, il est rappelé que l'ensemble a été rédigé avec la permission de Worm et un hommage appuyé est rendu à celui 'qui apporta les lumières et éleva les esprits au-delà de la fictive licorne' Bartholin, *De Unicornu observationes* (1678) 112.

49 Worm, *Museum Wormianum* 282-285.

50 Olearius Adam, *Relation du voyage en Moscovie, Tartarie et Perse [...]*, trad. Abraham de Wicquefort (Paris, Jean Du Puis : 1666) t.III, 133.

Cependant, il est tout à fait fascinant de voir que le terme 'narval' reste encore concurrencé pendant tout le siècle, et encore au siècle suivant, par celui de 'licorne', auquel les nomenclatures restent attachées⁵¹, comme on le voit avec la double représentation légendée de la gravure qui paraît dans l'ouvrage de Rochefort⁵² : celle-ci montre encore deux animaux différents, le Narval et la Licorne de mer, supposant que cette dernière aurait davantage l'apparence d'un cheval marin tel qu'on pouvait l'imaginer au XVI^e siècle (comme sur la planche de Rodolphe II) tandis que le narval, au museau plus rond de poisson, n'a pas cette tête de cheval⁵³.

Il n'est pas si simple de renoncer pour de bon à la croyance en la licorne. La merveille résiste sur le plan épistémologique, et reste beaucoup plus éloquente. La bonne solution semble de garder la co-occurrence narval-licorne, d'abord en imaginant que la licorne pourrait tout de même exister, puis en admettant progressivement qu'on puisse utiliser les deux termes pour désigner le seul narval. Ainsi, dans les nomenclatures du grand collectionneur Michael Bernhard Valentini, qui établit un répertoire des plus belles collections européennes au début du XVIII^e siècle, apparaît souvent la dénomination 'Unicornu verum, oder Unicornu marinum' ou bien 'Narval, woran [c'est-à-dire] Unicornu verum striatum'⁵⁴. Le mot *Unicornu* persiste donc toujours dans ces nomenclatures qui distinguent la 'fictive' de la 'vraie' licorne. On appelle vraisemblablement avec prudence, mais de manière de plus en plus fréquente, 'narval' ce qui est qualifié de 'vrai' unicorn : pourtant, même s'il est associé de façon de plus en plus systématique avec l'adjectif 'vrai', il ne fait pas complètement disparaître le terme 'unicorn', signe que ce qui importe dans un cabinet de curiosités, et qui concurrence l'érudition, c'est l'illusion de merveilleux. Après 1647, le collectionneur averti qui possède une corne de licorne peut considérer que l'un des meilleurs moyens d'assurer qu'elle est 'vraie licorne' est de dire qu'elle est de narval ... Mais le terme reste pauvre en connotations par rapport à Licorne, indétrônable de ce point de vue. Ainsi, le collectionneur choisit plus volontiers Licorne, tant la puissance évocatrice reste vivante, sorte de merveille

51 Il reste des confusions car les dictionnaires citent *Narwal* soit sous l'article *Licorne* (Furetière 1690), soit sous sa propre entrée (Thomas Corneille). En outre ils assimilent l'animal ainsi désigné au morse (Rohart). Voir Skårup – Arvellier, "Le mot français narval" 287.

52 Rochefort, *Histoire naturelle et morale des îles Antilles* 188.

53 Voir *Le Bestiaire de Rodolphe II* 120-121, planche 12.

54 Valentini Michael Bernhard, *Museum museorum, oder vollständige Schau-Bühne aller Materialien und Specereyen nebst deren natürlichen Beschreibung* (Francfort, Johann David Zunner : 1704). Sur une belle gravure qui regroupe différentes sortes de licornes, il distingue la licorne fictive ('Unicornu fictivium') qui a l'apparence du cheval à corne unique, d'un autre animal appelé 'Narwal', et sous-titré 'Unicornu marinum' (chap. xxx, 481).

lexicale pleine d'implicites merveilleux qu'il est toujours bon de sertir dans le texte d'un catalogue.

3 Une dent contre la corne : la parole savante comme obstacle aux mots des marchands

Enfin, les conséquences de cette découverte sont aussi bouleversantes sur le plan des représentations qu'elles ont été aussitôt désastreuses pour le commerce.

Ces dents généralement troquées avec les Groenlandais contre des babioles⁵⁵, ou tout simplement trouvées échouées sur la banquise, étaient donc revendues dans toute l'Europe sous le nom de 'cornes de licorne'⁵⁶. Rochefort en témoigne par exemple, évoquant ce navire de Flessingues, parti de Zélande à la fin du printemps de 1656, et qui rapporte du détroit de Davis 'plusieurs bonnes marchandises' dont il donne la liste : fourrures, côtes de baleine, costumes des habitants du pays, kayaks, et aussi 'ce qui étoit de plus rare et de plus précieux, c'étoit une quantité bien considerable de ces dens, ou cornes, de ces Poissons qu'on appelle Licornes de mer, qui sont estimées les plus grandes, les plus belles, et le mieux proportionnées, de toutes celles qu'on a veues jusques à present'⁵⁷. On comprend qu'un profit certain en est attendu, au prix sans doute de quelque mensonge :

On en a envoyé quelques unes à Paris, et en d'autres endroits de l'Europe, qui y ont esté bien receues : mais il y a grande apparence qu'elles seront encore plus prisées, quand on aura la connoissance des admirables vertus qu'elles ont en la medecine. Car bien que leur beauté, et leur rareté, leur doivent faire tenir le premier rang entre les plus precieuses richesses des plus curieus cabinets : plusieurs celebres medecins et apoticaire de Danemark, et d'Allemaigne, qui en ont fait les essays en diverses rencontres, témoignent constamment qu'elles chassent le venin, et qu'elles ont toutes les mêmes proprieté qu'on attribue communement à la Corne de Licorne de terre⁵⁸.

C'est un mensonge éhonté, que dénonça notamment Thomas Bartholin. Ce dernier affirme que si cette dent était rare autrefois parce qu'elle n'arrivait

55 Voir Olearius, *Relation du voyage en Moscovie* t.I, 136.

56 Voir La Peyrère, *Relation du Groenland* 87.

57 Voir Rochefort, *Histoire naturelle et morale des îles Antilles* 204.

58 Ibidem.

que par hasard pour s'échouer sur les rivages, avec les voyages plus fréquents au détroit de Davis, on peut désormais en faire commerce. Les marchands la vendent en tant que corne fictive, et l'introduisent en Europe sous l'appellation de *Monoceros*, à moins qu'ils ne soient démasqués par des gens plus avertis⁵⁹. Le nom de *Licorne* est devenu un argument de vente pour faire monter les prix : il est clair que les marchands ne s'entendent pas du tout avec les savants bien au contraire, La Peyrère en témoigne également⁶⁰ :

Les Danois qui les envoyoiēt ça, et là, pour les vendre, n'avoient garde de dire que ce fussent des dents de poissons ; ils les exposoient comme des cornes de Licornes, pour les vendre plus cherement⁶¹.

Le maintien des croyances est effectivement indispensable si l'on veut que les prix ne baissent pas. Une anecdote survenue à la cour des Moscovites, où les marchands Danois manquèrent une vente, est rapportée par La Peyrère. Elle montre à quel point les commerçants auraient bénéficié à faire taire les érudits :

Il n'y a pas long temps que la Compagnie du nouveau Groenland, qui est à Copenhague, envoya un de ses associez en Moscovie, avec quantité de grosses pieces de cette sorte de cornes, et un Bout entre autres, de grandeur fort considerable, pour le vendre au grand Duc de Moscovie. On dit que le grand Duc le trouva beau, et le fit examiner par son Medecin. Ce Medecin, qui en sçavoit plus que les autres, dit au grand Duc que c'estoit une Dent de Poisson ; et l'Envoye retourna sur ses pas à Copenhague, sans rien vendre. Comme il rendoit raison de son voyage à ses associez, il jetta toute la cause de son malheur sur ce meschant Medecin, qui avoit descrié sa marchandise, et avoit dit que tout ce qu'il avoit porté, n'estoit que des dents de poissons. Tu es un mal-adroit, luy respondit un associé, qui me l'a redit ; Que ne donnois tu deux ou trois cents ducats à ce Medecin, pour luy persuader que c'estoient des Licornes⁶² ?

59 Bartholin, *De unicornu* (1678) 109-112.

60 Contrairement à ce que dit l'historiographie traditionnelle sur les cabinets de curiosités (voir supra note 7).

61 La Peyrère, *Relation du Groenland* 90-91.

62 La Peyrère, *Relation du Groenland* 91-93.

L'anecdote peut faire sourire, mais s'il est vrai que le morceau de corne était, comme l'affirme plus loin l'auteur, estimé à la somme considérable de six mille risdalles, on peut comprendre le dépit des marchands devant une telle déconvenue⁶³.

À la fin du siècle, le pharmacien parisien Pierre Pomet (1658-1699) compile les principaux éléments connus, notamment le fait que ce qui se vend à Paris sous le nom de corne de licorne vient en fait du Narval ; il s'inquiète à son tour de l'évolution du marché, désormais irréversible, et témoigne du fait que les marchands savent qu'ils ont définitivement perdu la partie :

On sera donc desabusé de croire que ce que nous appellons corne de Licorne, et des Latins *Unicornis*, et des Grecs *Monoceros*, soit la corne d'un animal terrestre dont il est parlé dans l'Ancien Testament [...] mais n'est autre chose que la corne du Narwal ; à l'égard de son choix, elle n'en a point d'autre sinon d'estre bien blanche, les plus estimées sont les plus hautes, grosses, pesantes, cannelées et luisantes. Autresfois ces cornes étoient si rares que Monsieur André Racq Medecin de Florence, dit qu'un Marchand Allemand en vendit une à un Pape 4500 livres, ce qui est bien contraire du present, en ce qu'il s'en trouve de tres belles que l'on peut avoir à beaucoup meilleur marché⁶⁴.

Pierre Pomet continue pourtant de faire coexister dans son livre licornes terrestres et marines [Figs. 5.7, 5.8]. Il précise simplement qu'il y a la licorne d'autrefois et celle d'à présent, et que la réalité du marché est tenue par les 'cornes' de narval :

La Licorne, est un animal que les Naturalistes nous dépeignent sous la figure d'un Cheval, ayant au milieu du front une Corne en spirale, de deux à trois pied de long : mais comme l'on n'a pû jusques aujourd'huy, sçavoir la verité de la chose, je diray que celle que nous vendons, sous le nom de Corne de Licorne, est la Corne d'un Poisson que les Islandois appellent Narvual comme on le verra, cy-après, au chapitre des poissons⁶⁵.

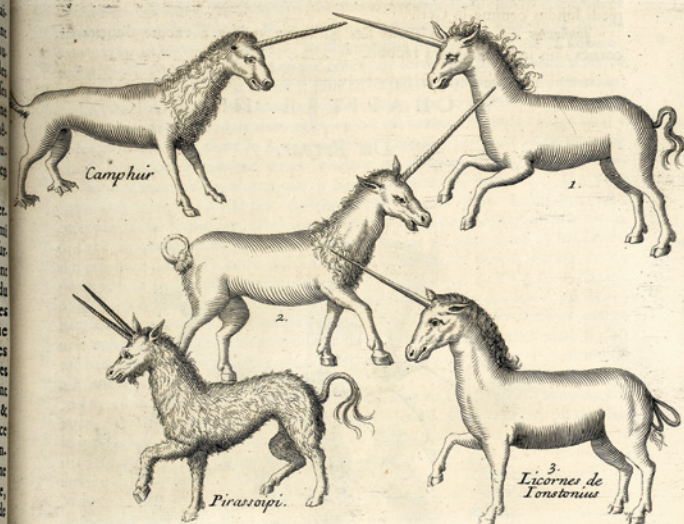
63 La Peyrère, *Relation du Groenland* 198.

64 Pomet Pierre, *Le Marchand syncere, ou Histoire générale des drogues* (Paris, Jean-Baptiste Loyson et Augustin Pillon : 1694), 2^{nde} partie, liv. I, ch. II, 9 ('De la Licorne') et ch. XXXIII, 78-80 ('Du Narwal') ; 80 pour la présente citation.

65 Pomet, *Le Marchand syncere, ou Histoire générale des drogues*. 2^{nde} partie, liv. I, ch. II, 9.

CHAPITRE II.

De la Licorne.



LA LICORNE, est un animal que les Naturalistes nous dépeignent sous la figure d'un Cheval, ayant au milieu du front une Corne en spirale, de deux à trois pied de long; mais comme l'on n'a pû, jusques aujourd'huy, sçavoir la verité de la chose; je diray que celle que nous vendons, sous le nom de Corne de Licorne, est la Corne d'un Poisson que les Islandois appellent Narvual comme on le verra, cy-après, au chapitre des poisons.

Cette Corne estoit autrefois beaucoup en usage, à cause des grandes proprietes que les anciens luy attribuoient, principalement contre les poisons, c'est ce qui faisoit que les grands Seigneurs en estoient fort amateurs, & pour ce sujet elle estoit vendue au poids de l'or. Cette erreur a esté tellement établie, & il y a encore quelques personnes qui en font si fort entérées, qu'il leur en faut à quelque prix que ce soit.

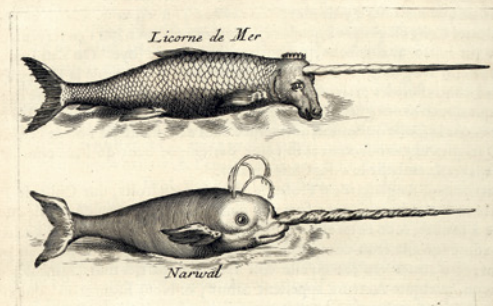
» Ambroise Paré, dans un petit Traité qu'il a composé de la Licorne, dit que
 » dans l'Arabie deserte, il s'y trouve des Asnes sauvages, qu'ils appellent Camphurs, Camphurs.
 » portant une corne au front, avec laquelle ils combattent contre les Taureaux,
 » & dont les Indiens se servent pour se garantir de plusieurs maladies, particulie-
 » rement des veneneuses; & qu'en Arabie, près de la Mer rouge, il se trouve un.

II. Partie.

B

FIGURE 5.7 "De la licorne". Pomet Pierre, *Le Marchand syncere, ou Histoire générale des drogues* (Paris, Jean-Baptiste Loyson et Augustin Pillon : 1694), 2^{nde} partie, liv. I, ch. II, p. 9. Bibliothèque nationale de France, Gallica

CHAPITRE XXXIII.

Du Narwal.

LE NARWAL ainsi appellé des Islandois, & de quelques autres Rhoar, & de nous Licorne de Mer, est un gros Poisson que quelques-uns estiment être une espèce de Balaine, qui se trouve en quantité dans la Mer glaciale, ou du Nord, principalement le long des côtes d'Islande & Groënlande. Ce monstre marin porte au bout de son nez une corne blanche, pesante, luisante & de figure spirale, telle qu'est celle de saint Denis en France: Il y en a de différentes grosseurs & pesanteurs, que l'on peut voir dans les cabinets des Curieux, comme est celle de Monsieur Morin Medecin de feu Mademoiselle de Guise, que j'ay vue & maniée, & qui est représentée cy-dessus. M^r Charas m'a dit en avoir eu une qui étoit plus haute & plus grosse que celle du Tresor de S. Denis. Ce sont les tronçons de cette corne que nous vendons à Paris, comme ils se vendent ailleurs, pour véritable corne de Licorne, à laquelle quelques personnes attribuent de grandes propriétés, ce que je ne veux ny autoriser ny contredire, pour ne l'avoir pas expérimenté, n'ayant trouvé l'occasion d'en avoir des preuves suffisantes.

Il se trouve encore un autre Poisson à qui l'on a donné le nom de Licorne de Mer, qui se trouve en différens endroits. Monsieur Dumantel dit en avoir vu une prodigieuse au rivage de l'Isle de la Tortue proche S. Domingue en l'année 1644. Cette Licorne, dit-il, poursuivoit une Carangue, ou un autre Poisson mediocre, avec une telle impetuosité, que ne s'apercevant pas qu'elle avoit besoin de plus grande eau qu'elle n'en avoit pour nager, elle se trouva la moitié du corps à sec, sur un grand banc de sable, d'où elle ne pût regagner la grande eau, & où les habitans de l'Isle l'assommerent. Elle avoit environ dix-huit pieds de long, étant de la grosseur d'une barrique au fort du corps. Elle avoit six grandes nageoires semblables dans leurs extremités aux rames de galere, dont

FIGURE 5.8 "Du Narwal". Pomet Pierre, *Le Marchand syncere, ou Histoire générale des drogues* (Paris, Jean-Baptiste Loyson et Augustin Pillon : 1694), 2^{de} partie, liv. I, ch. XXXIII, p. 78. Bibliothèque nationale de France, Gallica

On aura compris le rôle de premier plan des savants ayant visité le cabinet de curiosités d'Ole Worm dans ce dévoilement d'une vérité qui n'est pas sans enjeux économiques. Isaac de La Peyrère a effectivement un rôle décisif dans la diffusion de ce savoir nouveau vers la France et le reste de l'Europe. On peut dès lors avancer une datation : après 1647, date où paraît la *Relation du Groenland*, l'ambiguïté est levée dans le domaine français : la supposée 'corne' est toujours très belle, mais elle n'est plus que la dent d'un poisson, et ceci même si les incrédules demeurent nombreux. En 1675, un érudit comme Athanase Kircher, Jésuite de Rome et grand collectionneur lui-même, qui ne peut donc pas ignorer ce qui se dit dans le nord de l'Europe, feint dans son *Arca Noë* de ne pas connaître l'existence du narval et s'en remet uniquement au récit biblique ainsi qu'à une représentation traditionnelle, sur la gravure, du quadrupède terrestre en forme de cheval portant corne⁶⁶.

En entrant dans l'histoire naturelle, et même si elle tarde à sortir de la fable, la licorne change son nom sans le perdre tout-à-fait, et à la fois devient 'verum', vraie. Cet incident lui fait céder assurément de sa valeur marchande, mais elle reste l'objet d'une sincère fascination, et l'on continuera d'en acheter. Il faut y croire ! Ce qui est apparemment moins difficile que de cesser d'y croire. Force est de reconnaître que l'emprise du merveilleux est telle que la licorne continue d'exister dans les imaginations, alors même qu'il a été prouvé que la corne est une dent, que le cheval est un poisson, que la licorne est un narval. L'épistémologie naissante n'a guère de prise sur le merveilleux, et les deux s'associent le plus souvent dans les cabinets de curiosités en une osmose parfaitement complémentaire, aussi vrai que l'histoire naturelle, dans la stricte tradition fondée par Pline, garde un lien structurel avec les histoires légendaires. C'est un tournant révolutionnaire, de la corne à la dent, du quadrupède au poisson, et d'un nom à l'autre, qu'Ole Worm, collectionneur de curiosités intéressé par toutes les énigmes du monde, aura eu le plaisir de découvrir et de faire vivre, particulièrement entre 1636 et 1647. Il a ainsi construit avec passion un savoir qui dessine autrement les frontières du merveilleux sans toutefois les effacer mais en posant la question de leurs limites, un savoir qui ne va pas sans partage, et qui repose plus que jamais sur un réseau savant, sur la possibilité de conférer avec de doctes amis dont nous avons pu apprécier les différents rôles : Danois, Anglais, Français, Hollandais, Islandais, tous conversent et sont à l'affût de nouvelles propositions de terminologie. Ole Worm fait de son cabinet de curiosités un lieu de mots, ouvert, vivant et tourné vers le monde. Y sont admis disciples, visiteurs érudits ou émerveillés, grands de ce monde, susceptibles

66 Kircher Athanase, *Arca Noë in tres libros digesta* (Amsterdam, Johannes Janssonius : 1675), livre I, section III, ch. 5, 58, "Monoceros".

d'avoir les idées assez larges pour reconnaître que la corne fabuleuse puisse être une simple dent et que cette découverte non seulement ne soit pas un drame, mais qu'elle soit bel et bien, finalement, en elle-même, la véritable éblouissante merveille offerte à la curiosité des naturalistes.

Bibliographie

- Bacci Andrea, *Discorso dell'alicorno* (Florence, Giorgio Marescotti : 1573).
- Bartholin Caspar, *Opuscula quatuor singularia, I. De Unicornu* (Copenhague, Georg Hanzschius : 1628).
- Bartholin Thomas, *De Unicornu observationes novae. accesserunt de aureo cornu CL. V. Olai Wormii eruditorum judicia* (Padua, Iulio Crivelli : 1645).
- Bartholin Thomas, *De Unicornu observationes novae, secunda editione* (Amsterdam, Henricus Wetstenius : 1678).
- Belon du Mans Pierre, *La nature et diversité des poissons* (Paris, Charles Estienne : 1555).
- Belon du Mans Pierre, *Les Observations de plusieurs singularitez et choses mémorables, trouvées en Grèce, Asie, Judée, Egypte, Arabie et autres pays étranges* (Anvers, Christophe Plantin : 1555).
- Le Bestiaire de Rodolphe II*, éd. Haupt H. – Irblich E. – Staudinger M. – Vignau-Wilberg T. (Paris : 1990).
- Boodt, Anselme Boece de, *Le Parfait joaillier ou histoire des pierreries*, trad. Jean Bachou (Lyon, Jean-Antoine Huguetan : 1644).
- Boutroue M.E., "Le cabinet d'Ulisse Aldrovandi et la construction du savoir", in Martin P. – Moncond'huy D. (éd.), *Curiosité et cabinets de curiosités* (Paris : 2004) 43-63 (disponible en ligne à l'adresse <http://curiositas.org/le-cabinet-dulisse-aldrovandi-et-la-construction-du-savoir>) [dernière consultation le 1^{er} mars 2017].
- Catelan Laurent, *Histoire de la nature, chasse, vertus, proprieté et usage de la licorne* (Montpellier, Jean Pech : 1624).
- Du Bartas Guillaume, *La Sepmaine ou Creation du Monde*, éd. J. Céard (Paris : 2011).
- Faidutti B., *Images et connaissance de la licorne (Fin du Moyen Âge-XIX^e siècle)*, Paris, thèse de doctorat de l'université Paris-XII (Sciences littéraires et humaines), 30 novembre 1996 (disponible en ligne <http://www.faidutti.com/unicorn/unicorn.htm>).
- Frobisher Martin, *La navigation du capitaine Martin Frobisher [...]* trad. Nicolas Pithou (Genève, Antoine Chuppin : 1578).
- Frobisher Martin, *The Three Voyages of Martin Frobisher*, éd. V. Stefansson et E. McCaskill (Londres : 1938).
- H.G.A. [Hessel Gerritsz], *Histoire du pays nommé Spitsberghe [...]* *La triste racompte des maux, que noz Pecheurs, tant Basques que Flamens, ont eu a souffrir des Anglois, en l'esté passée. [...] Et en après une Protestation contre les Anglois, et annulation de*

- touts leurs frivoles arguments, parquoy ils pensent avoir droict, pour se faire Maistre tout seul, dudict Pays* (Amsterdam, a l'ensieigne du Carte nautique : 1613).
- Kircher Athanase, *Arca Noë in tres libros digesta* (Amsterdam, Johannes Jansonius : 1675).
- La Peyrère Isaac, *Relation du Groenland* (Paris, Augustin Courbé : 1647).
- La Peyrère Isaac, *Relation d'Islande* (Paris, Louis Billaine : 1663).
- La Popelinière Lancelot Voisin de, *Méditations cosmographiques de la fabrique du monde* (Amsterdam, Jodocus Hondius : 1609).
- Lievin Hulst (dit Levinus), *Die XXVI. Schiff-Fahrt : Beschreibung einer [...] Reyse durch [...] Johann Müncken inn Jahren 1619. und 1620. verrichtet [...] (Francfort sur le Main, Christophe Le Blonq : 1650).*
- Magnus Olaus, *Histoire des pays septentrionaux* (Paris, Martin le Jeune : 1561).
- Magnus Olaus, *Historia de gentibus septentrionalibus* (Rome, Giovanni Maria Viotti : 1555).
- Marrache-Gouraud M., "Affronter et ravir la licorne des autres. Le chemin d'Ambroise Paré parmi les autorités : in Giacomotto-Charra V. – Silvi C. (éds.), *Lire, choisir, écrire. La vulgarisation des savoirs du Moyen Âge à la Renaissance* (Paris : 2014) 185-198.
- Marrache-Gouraud M., "Les secrets de la licorne", in Maber R. (éd.), *La France et l'Europe du nord au XVII^e siècle* (Tübingen : 2016) 195-205.
- Marsh C. – Ventura V., *Unicornicopia. Magical Creatures* (Londres : 2012).
- Ogilvie B.W., *The Science of Describing* (Chicago : 2006).
- Olearius Adam, *Relation du voyage en Moscovie, Tartarie et Perse [...]*, trad. Abraham de Wicquefort (Paris, Jean Du Puis : 1666).
- Paré Ambroise, *Discours de la momie, de la licorne, des venins et de la peste* (Paris, Gabriel Buon : 1582).
- Pomet Pierre, *Le Marchand syncere, ou Histoire générale des drogues* (Paris, Jean-Baptiste Loyson et Augustin Pillon : 1694).
- Rochefort Charles de, *Histoire naturelle et morale des îles Antilles de l'Amerique* (Rotterdam, Arnould Leers : 1658).
- Röling B., "Der Wal als Schauobjekt : Thomas Bartholin (1616-1680), die dänische Nation und das Ende der Einhörner", in Enenkel K.A.E. – Smith P.J. (éds.) *Zoology in Early Modern Culture* (Leyde – Boston : 2014) 172-196.
- Settle Dionyse, *A True Reporte of the Last Voyage into the West and Northwest Regions* (Londres, Henry Middleton : 1577).
- Skårup P. – Arvelliér R., "Le mot français narval", *Revue Romane* 10, 2 (1975) 281-292.
- Smith P.H. – Findlen P. (éds.), *Merchants and Marvels: Commerce, Science and Art in Early Modern Europe* (New York – London: 2002).
- Thevet André, *Cosmographie universelle* (Paris, Guillaume Chaudière : 1575).

Valentini Michael Bernhard, *Museum museorum, oder vollständige Schau-Bühne aller Materialien und Specereyen nebst deren natürlichen Beschreibung* (Francfort, Johann David Zunner : 1704).

Worm Ole, *Olai Wormii et ad eum doctorum virorum Epistolae*, 2^e éd. (Copenhague, s.n. : 1751 [1^e éd. 1728]).

Worm Ole, *Museum Wormianum, seu historia rerum rariorum* (Leyde, Jean, Louis et Daniel Elzevir : 1655).

The Natural-Historical Rejuvenation of Emblematics: The Moral Pedagogy of Nicolas Caussin's *Polyhistor Symbolicus*

Raphaële Garrod

1 A Jesuit Polyhistory

In 1618, Nicolas Caussin publishes the *Polyhistor symbolicus*. Organised in twelve books mirroring the ‘natural order’ of the world, the *Polyhistor* is a compilation of parables providing its reader with moral interpretations of miscellaneous material.¹ Historical anecdotes culled from the Bible, from ancient historians and more modern ones, sit next to descriptions of natural particulars. Concluding apologues state the ethical interpretation for each entry; their meaning is sometimes obscure, and ranges from exalted Christian exhortations to more worldly considerations about acceptable mundane behaviour.²

The author of this puzzling text, the Jesuit Nicolas Caussin (1583-1641), was Descartes's contemporary. While Caussin was by no means a *novator*, he was a renowned teacher of rhetoric, and a highly regarded preacher in court. He amended his copious textbook on rhetoric, the *Eloquentiae sacrae et humanae parallela*, throughout his life.³ He was also the author of a successful manual of conduct in the vernacular, the *Cour Sainte*, which provided the moral guidelines for the establishment of a truly Christian court. Both texts circulated in Europe throughout the seventeenth century; the *Cour Sainte* was also

1 Caussin defines the ‘natural order’ as one form of rhetorical *dispositio*: Caussin Nicolas, *De eloquentia sacra et humana* (Cologne, Johann Kinck: 1691), book VI, “De amplificatione”, ch. 3: “De triplici dispositione in genere” 304.

2 See for example the ascetic praise of fasting: “Saliva hominis jejuni salutifera: jejunium” (The saliva of a fasting man, bringing salvation), because he bit a serpent, the symbol of sins, to death, or the condemnation of mundane slander: “Boves Neurici: columniatores obliqui” (Belgian cows: covert slanderers), because their horns grow on their back: Caussin Nicolas, *Polyhistor symbolicus* (Cologne, Johann Kinck: 1623) 117 and 313.

3 According to the Catalogue collectif de France (CcFr), eight editions were printed between 1623 and 1657. The text was printed in Lyons, Paris and Cologne in 1623, 1624, 1627, 1630, 1634, 1636, 1637, 1642, 1651, 1657.

translated into English.⁴ Caussin therefore stood at the forefront of Jesuit pedagogy; his rhetorical and pastoral works found their audiences. These works outline a very different intellectual landscape from Cartesianism.

This other landscape of the Grand Siècle was labelled 'the emblematic worldview' by William B. Ashworth.⁵ While Caussin's *Polyhistor* gestures directly towards its classical predecessor, the collection of *mirabilia* selected from Pliny's *Natural History* by the Roman grammarian Caius Julius Solinus in the fourth century AD and entitled *Polyhistor*, the history of its compilation and publication inscribes Caussin's *Polyhistor* within the field of rhetoric and emblematics. His florilegium appeals to philological and observational practices characterizing the Renaissance natural-historical enterprise that Brian Ogilvie identified in *The Science of Describing*, yet natural-historical descriptions in the *Polyhistor symbolicus* does away with the opposition between empiricism and erudition within which most contemporary scholarship has situated early modern natural history, mostly, it seems, because its purpose is *not* knowledge of nature, but moral education. This moral slant offers a new insight into what seems retrospectively miscellaneous, piecemeal, or even consistently inaccurate in the humanist natural-historical description.

2 Polyhistory: The Originality of Caussin

Solinus's *Polyhistor*, read in verse forms throughout the Middle Ages, was granted a new lease of life under the conjoined influence of humanism and printing.⁶ In his preface, Solinus defines the polyhistor as a polymath, and describes his work as a compendium of knowledge rather than a repository of

4 An anonymous translation of the first two volumes was printed in Saint Omer under the title *The Holy Court* in 1626, another edition including the third volume was printed in 1634 in Rouen. Sir Th. H, the translator, could be the English poet Thomas Hawkins. His nephew Francis Hawkins (1628-1681, S.J.) completed the English translation of the whole *Cour Sainte*, printed in London in 1678 by John Williams.

5 Ashworth Jr W.B., "Natural History and the Emblematic Worldview", in Lindberg D.C. – Westman R.C. (eds.), *Reappraisals of the Scientific Revolution* (Cambridge: 1990) 303-332.

6 On Solinus's *Polyhistor* in the early modern period, see Dover P., "Reading Pliny's 'ape' in the Renaissance: The *Polyhistor* of Solinus", in Jason König J. – Woolf G. (eds.), *Encyclopaedism from Antiquity to the Renaissance* (Cambridge: 2013) 414-443. Polyhistory first instantiated the Renaissance claim to encyclopaedism before floundering into its mimicry in textbook culture: Grafton A., "The World of the Polyhistor – Humanism and Encyclopaedism", *Central European History* 18, 1 (1985) 31-47. This trajectory expresses the rise and fall of the emblematic worldview: Westerhoff J.C., "A World of Signs: Baroque Pansemioticism, the Polyhistor and the Early Modern Wunderkammer", *Journal of the History of Ideas* 62, 4 (2001) 633-650.

eloquence: 'This book was intended as a compendium [...] you will find that it contains as it were some ferments of knowledge, rather than snatch the glitters of eloquence.'⁷ He identifies his miscellany as a treatise of physical geography, interspersed with descriptions of men and animals, memorabilia regarding the rites and mores of distant nations, and exotic stones – their variety and strangeness make them memorable and will offer a remedy to the reader's boredom.⁸

The humanist Élie Vinet states in the prefatory letter to the reader of his edition of the *Polyhistor* that the following title featured on the codices he used: 'The Polyhistor of Julius Solinus, edited and amended by himself; on the position of the terrestrial globe, and on wondrous particulars contained in the world'.⁹ Alongside the emphasis on cosmography, the *mirabilia* are thus defining features of polyhistory and Plinian natural history alike; they identify these genres as cosmographical surveys as well as encyclopaedic collections of authorities on a variety of (natural) topics. The early modern history of Solinus's *Polyhistor* in print acknowledges both dimensions.¹⁰

Caussin's *Polyhistor symbolicus* altogether does away with cosmography; moreover, while his *Polyhistor* seems at first to qualify as an encyclopaedic collection of *mirabilia*, Caussin's explicit definition of the rhetorical function of these *mirabilia* distances him from his classical predecessor. In his preface, he states that he chose the title *Polyhistor symbolicus* because the book consists of a collection of *historiae* accommodated to moral teaching 'in the symbolic mode' – *historia* in this context denotes both the description of a particular and the narrative of a singular event or anecdote.¹¹ For Caussin, polyhistory

7 'Liber est ad compendium praeparatus [...]: cui [...] velut fermentum cognitionis magis inesse, quam bracteas eloquentiae deprehenses'. Solinus, *Polyhistor*, ed. Élie Vinet (Toulouse, Enguebert Marnef: 1554) 2.

8 Solinus, *Polyhistor* 2.

9 'Tulii Solini Grammatici Polyhistor, ab ipso editus et recognitus, de situ orbis terrarum, et de singulis mirabilibus, quae in mundo habentur', Solinus, *Polyhistor*, ed. Vinet, fol. iiii.

10 In France, the medieval *Polyhistor* (*De mirabilibus mundi*) is copied from the ninth to the fifteenth century. The CcFr makes it possible to identify the two editorial trends of the text. One defines the *Polyhistor* as a thesaurus, sometimes used to supplement and amend Pliny. This first trend includes the 1536 joint edition of Pliny and Solinus alongside Ermolao Barbaro's *Castigationes*, the Marnef edition of 1554, the Plantin edition of 1572, and the 1605 'thesaurus' edition of Jacob Grasser. The other, dominant trend identifies the *Polyhistor* as a cosmographical text, consistently printed alongside Pomponius Mela's *De situ orbis*, and sometimes Aethicus Ister's *Cosmographia*: the CcFr mentions editions printed in 1518, 1533, 1536, 1538, 1540, 1543, 1563, 1577, 1586 and 1646.

11 'Placuit hunc librum Polyhistorem symbolicum inscribere, quod variarum historiarum Stromata contineat ad egregias aliquot sententias συμβολικως accommodata' (It was relevant to entitle this book *Polyhistor symbolicus*, since it contains a miscellany of various *historiae* adapted to several excellent doctrines in the symbolic fashion), Caussin

is primarily a miscellany of *historiae* put to moral use.¹² His own *Polyhistor symbolicus* is, in essence, a collection of moral parables organised in twelve books: 1. The world and elements; 2. Divinities of various people; 3. Virtues; 4. Vices; 5. Ceremonies, habits of various people; 6. Birds; 7. Quadrupeds; 8. Fish; 9. Serpents and insects; 10. Plants; 11. Stones; 12. Man-made objects.¹³ While this structure generates the impression that the *Polyhistor symbolicus* mirrors in an orderly fashion the variety of the natural world of which man is but a part, unlike its classical model, the *Polyhistor's* avowed purpose is not to survey accurately the riches of the natural world, but to deliver ethical lessons. The referential accuracy of its examples is therefore purely instrumental to ethics. Caussin explicitly states in his preface that the 'truth' to be found in the *Polyhistor* lies in the symbolical, ethical interpretation of their natural referents, thus relegating these to that very rhetorical role Solinus denied to his own work. One should not ponder about the referential truth of the *mirabilia* collected in the *Polyhistor symbolicus*, but enjoy them as the very fabric of the eloquent 'clothing' of ethical truth:

I have excerpted entirely all the stories from ancient and excellent historians; if some of these sometimes seem overly wonderful, it was not our purpose to investigate their truth very carefully: my aim was not so much to write history, but parables. May I therefore be allowed to say about these like Saint Augustine in book 21 of the *City of God*, after he had merely surveyed many *mirabilia* of this kind: 'Many of these I deem such that I have determined that they should neither be confirmed nor refuted.' Their interpretations are entirely genuine and clothe in carefully selected attire the best doctrines.¹⁴

Nicolas, *Polyhistor symbolicus, electorum symbolorum, et parabolarum historicarum Stromata. XII libris complectens* (Cologne, Johann Kinck: 1623) fol. 3r.

12 Caussin inscribes his compendium within a longstanding tradition of allegorical writings about nature ranging from the hexameral interpretations of Church Fathers like Basil of Caesarea and Ambrose to the most ubiquitous representative of the medieval bestiaries, the *Physiologus* (Caussin, *Polyhistor symbolicus* fol. 4r). The *Polyhistor symbolicus* also claims among its predecessors the *Stromata* of Clement of Alexandria (ca. 150-215 AD). Consisting of seven books, the *Stromata* teach the fundamentals of the Christian life by commenting on an eclectic wealth of excerpts spanning ancient literary and philosophical classics; it displays the influence of Neoplatonic and hermetic exegesis. See Itter A.C., *Esoteric Teaching in the Stromateis of Clement of Alexandria* (Leiden: 2009) 33-140.

13 Caussin, *Polyhistor symbolicus* fol. 3v.

14 Ibidem, fol. 6r: 'Historias ferme omnes ex antiquis et probatis historicis attuli, si quae interdum plus admirationis habere videantur. Non fuit nostri instituti scrupulosius disquirere veritatem, cum praesertim non tam historiam quam parabolas scriberem. Itaque de

Polyhistory therefore fulfils a rhetorical function in the teaching of ethics for Caussin by ‘clothing doctrine in carefully chosen attire’. In the *Polyhistor symbolicus*, such clothing and doctrines can be quite different from the allegories of the medieval bestiary tradition. The reader will find there the set repertoire of well-known beasts of this tradition, such as the pelican allegorizing the sacrifice of Christ because it revives its chicks by feeding them its own blood.¹⁵ However the *Polyhistor symbolicus* also extends the repertoire of the medieval bestiary and of early modern emblem books by amending them in the light of contemporary natural-historical practices and findings; moreover, Caussin’s emblematic pedagogy can be peculiarly rhetorical as it relies on the manipulation of affects (*movere*) and the exercise of wit (*delectare*).¹⁶ The publication history of the *Polyhistor symbolicus* sheds light on its rhetorical and emblematic contexts.

3 The Contexts of the *Polyhistor*: Rhetoric and Emblematics

In 1618, Caussin publishes the *Polyhistor symbolicus* alongside the *De symbolica Aegyptorum sapientia*, a discussion of the allegorical meaning of hieroglyphics. During that time, he is also at work on the *eloquentiae parallela*, published in 1623. The *Polyhistor symbolicus* and the *De sapientia* therefore instantiate his views on animal symbolism – Caussin defines hieroglyphics as ‘nota animalium’ (signs of animals) while formulating his rhetorical theory in another textbook.¹⁷

his fas est mihi dicere quod S. Augustinus de Civitate Dei lib. 21, cum multa huius generis plane admirabilia percensuisset: multa sic habeo. ut neque affirmanda neque neganda decreverim. Interpretationes ferme sunt ingenuae, et exquisitis vestitae optimarum sententiarum ornamentis’.

15 The Pelican allegory features in the *Physiologus*. Caussin mentions Augustine’s commentary on Psalm 101 as a source in his own account, entitled “Pelicanus: Crescit de vulnere salus” – “Pelican: salvation stems from the wound”. Caussin, *Polyhistor symbolicus* 292; Augustinus Hipponensis, *Enarrationes in Psalmos*, eds. E. Dekkers – J. Fraipont, CCL 38–40, 3 vols. (Turnhout: 1956), vol 3, 67, and Carmody F.J. (ed.), *Physiologus Latinus: éditions préliminaires, versio B* (Geneva: 1939) 17. The Pelican featured in the emblematic programme designed by the Jesuit college of La Flèche to commemorate the first anniversary of the death of Henri IV: “Devises pour la pompe funèbre de Henri IV au collège de la Flèche” (Paris: BNF, cabinet des Estampes, M.88238–9).

16 See Caussin, *De eloquentia*, book III (“De adminiculis eloquentiae”), ch. 6: “De ingeniorum delectu, ad eloquentiam specialius dictum” 153.

17 Caussin Nicolas, *De symbolica Aegyptorum sapientia* (Cologne, Johann Kinck: 1623) fol. 4r.

The publication history of the *Polyhistor symbolicus* and the *De sapientia*, as well as the content of the *Eloquentiae parallela*, define the *Polyhistor* as a made-up collection of fashionable rhetorical examples. The *Eloquentiae parallela* is a magisterial sum on rhetoric illustrating the rules of good eloquence by means of an astonishingly rich corpus of examples. Caussin endlessly quotes the classical and patristic paradigms he deems worthy of imitation; he also gives his readers a taste of the shameful pitfalls to be avoided. Caussin's own textbook therefore testifies to his belief in the Aristotelian observation that one learns best from examples.¹⁸

It is in the process of gathering examples for the *De eloquentia* that Caussin came across the bilingual Greek-Latin edition of Horapollon's *Hieroglyphica* by Jean Mercier.¹⁹ The *Hieroglyphica* had been written by a fourth-century Greek grammarian; the first book claimed to unveil the ideographic truth of Aegyptian hieroglyphics, the second one offered allegorical and symbolic interpretations of animals excerpted, among others, from Aelian and Pliny. The *Hieroglyphica* prompts Caussin's own emblematic reflection. He envisages emblematics as a rhetorical pedagogy of morals: emblems must operate as striking parables, whose *enargia* appeals to their spectators' or readers' affects in order to prompt the exercise of their moral judgment. The preface of the *De sapientia* states that the book consists of a florilegium of 'symbols', 'enigmas' and, predominantly 'emblems' understood as rhetorical ornaments.²⁰ These

18 'Ejusdem generis sunt exempla, quorum usus frequens, probatio facilis et efficax, nec impar detectatio, ut non immerito dicatur longum inter esse per praecepta; breve et efficax per exempla' (Examples are of the same kind [i.e. they are types of inductions] – their use is common, their probative force easy and effective, nor is their ability to please inferior, so that it is rightfully said that working one's way through the precepts is a lengthy business, and a quick and effective one through examples). Caussin, *De eloquentia sacra et humana*, book 6 ("De dispositione et partibus orationis"); ch. 27 ("De ratiocinatione et inductione") 342. See also the Jesuit dialectician Pedro da Fonseca quoting Aristotle's *Problemata*: 'Per exempla, inquit, et fabulas, facilius discitur; sunt etenim quae explorata habeantur, et particularia sint' (One learns more easily through examples and fables, for they indeed deal with known things, and with particulars). Fonseca Pedro da, *Dialecticarum institutionum libri octo* (Cologne, Maternus Colinus: 1578) 31.

19 Aldus Manutius published the *editio princeps* of Horapollon alongside Greek fabulists in 1505. Jean Mercier's first edition appeared in 1548, followed by another one in 1551: Horapollon, *Hieroglyphica: De sacris notis et sculpturis*, ed. and trans. Jean Mercier (Paris, Christian Wechel: 1548). See Caussin, *De symbolica Aegyptiorum sapientia* 3.

20 Voir Dekoninck R., "Ad imaginem, plaisir et connaissance dans la pensée iconologique de Nicolas Caussin", in Conte S. (ed.), *Nicolas Caussin: rhétorique et spiritualité à l'époque de Louis XIII, Actes du colloque de Troyes (16-17 Septembre 2004)*, coll. *Ars rhetorica* 19 (Berlin: 2007) 317-326; Vuilleumier Laurens F., "Eloquence épictétique et doctrine des images: des *Eloquentiae parallela* aux *Electorum symbolorum et parabolorum syntagmata* de Nicolas Caussin", *ibidem*, 299-316; and from the same, "Nicolas Caussin: rhétorique et éloquence

are closely related to the “Epideictic Characters” gathered in the eleventh book of the *De eloquentia*:²¹

As I was devising the three books of the *De eloquentia* and making some provision of the finest abundance of examples intended to educate the oratorical ability, I also cast my mind onto the symbolic wisdom of the ancients: epideictic eloquence customarily shines more pleasingly when illuminated by it, as if by gems. Indeed I deemed it appealing to avoid the trite abundance of similitudes and to have these collated together.²²

The purpose of the “Epideictic Characters” in the eleventh book of the *De eloquentia* is *enargia*, which ‘brings’ the referent ‘before the eye’ of the reader; Caussin includes in these hypotyposes ‘ethical characters’, which ‘touch to the very lineaments of the soul’: this is a fundamental predicament of his emblematic moral pedagogy.²³ The *De eloquentia* emphasizes the rhetorical importance of vivid representation. Its corollary is the focus of the *De sacra Aegyptiorum sapientia* and the *Polyhistor* on the rhetorical attraction offered by obscure representation stimulating one’s hermeneutical wit: the striking example must therefore be vivid and wondrous in order to provide the ideal emblematic material.²⁴

Caussin thus acknowledges the Neoplatonic-cum-hermetic tradition stemming from the humanist interests in the works of Horapollon and of his Hellenistic counterpart Hermes Trismegistes – the esoteric feature of this tradition becomes the sign of rhetorical literacy and elitism in his hands: his own use and revival of it entertains the happy few of Parisian salons, whose wit was

sacrée”, in Vuilleumier Laurens F., *La Raison des figures symboliques à la Renaissance et à l’âge classique* (Geneva: 2000) 173-181.

21 Caussin, *De eloquentia* 641-756. Includes examples from Philo of Alexandria and Ambrose, both also mentioned in the preface of the *Polyhistor symbolicus*.

22 ‘Cum libros de triplici eloquentia, et apparatus quendam ex florentissima exemplorum copia ad oratoriam facultatem instruerem, adjeci quoque animum ad symbolicam veterum sapientiam, cuius veluti gemmis illuminata fulgere gratius epideicta solet eloquentia. [...] Placuit autem consulto vitare tritam similitudinum copiam et eas consecrari’. Caussin, *De symbolica Aegyptiorum sapientia* fol. 3r (“Libri institutum”).

23 ‘multa se prodent in Ethicis characteribus, quae ad animi lineamenta attineant’, Caussin, *De eloquentia* 642.

24 See Daston L. – Park K., *Wonders and the Order of Nature (1150-1750)* (New York: 1998), Evans R.J.W. – Marr A. (eds.), *Curiosity and Wonder from the Renaissance to the Enlightenment* (Aldershot: 2006); and Kenny N., *Curiosity in Early Modern Europe: Word Histories* (Wiesbaden: 1998); *The Uses of Curiosity in Early Modern France and Germany* (Oxford: 2004).

sharpened in Jesuit schools.²⁵ Indeed the *De symbolica Aegyptorum sapientia* is a guide to the good making and interpretation of 'symbols', 'enigmas' and 'emblems' defined in the preface as deliberately obscure similitudes.²⁶ Thus, an enigma is a 'convoluted and obscure speech'. As for the emblem, it is 'in its proper sense, an artful and pleasant symbol of a moral nature, consisting of a picture and its motto, which usually points to a more severe moral doctrine'.²⁷

The *De symbolica Aegyptorum sapientia* and the *Polyhistor* belong in these joint traditions of rhetorical *copia* and emblematic moral teaching. They both offer collections of striking similitudes-as-examples and emblematic material: the only missing element in the emblematic structure (a motto, a picture, and their moral interpretation, often in an epigram) – is the picture. A significant portion of the *De symbolica Aegyptorum sapientia* – a text without any iconic content – comments on the material of early modern emblem books such as Mercier's edition of the *Hieroglyphica*.²⁸ Illustrations are also absent from the *Polyhistor symbolicus* which can be construed as providing updated natural-historical material for the making of new emblems. It is to the relationship between this updated natural-historical content and emblematic that we now turn.

25 'Et certe licet ex Philone et Clemente Alexandrino colligere, duplicem fuisse scientiam Aegyptorum, unam quidem popularem, apertam, et expositam omnibus; puta Geometriam, Astrologiam, Arithmeticam, Musicam; alteram vero arcanam et sacram, dictam Hieroglyphicam, qua per symbola quaedam atque aenigmata, gravissima quaeque Theologiae, Physiologiae et Politicae facultatis mysteria et dogmata denotentur' ('And one can gather with certainty from Philo and Clement of Alexandria that Egyptian wisdom was double: for one was vulgar, open to the people, and exposed to all – think of Geometry, Astronomy, Arithmetic, Music – the other however, called 'Hieroglyphic', was hidden and sacred, and denoted with some symbols and enigmas all the most important mysteries and doctrines of the theological, Physiological, and Political faculties'). Caussin, *De symbolica Aegyptorum sapientia* fol. 5r. Caussin uses the term 'physiological' etymologically: physiology is the decyphering of Nature, understood as a symbolic system. See Zucker A. (ed.), *Physiologos: le bestiaire des bestiaires* (Grenoble: 2005) 23-25.

26 'si proprie ea dicantur symbola, quae rem, in qua inest aliquid obscuratis, figurate significant, unde Emblemata, et Parabolae, et Apologi, et alia huiusmodi possunt communi appellari symbola' (if used in a literal sense, those are called symbols that represent figuratively anything in which something obscure inheres – as a result, emblems, parables, apologues and others of the same common sort can all be labelled symbols.) Caussin, *De symbolica Aegyptorum sapientia* fol. 8r-v.

27 'Sermo implexus et obscurus, cuius variae sunt genera'; 'Est enim proprie symbolum aliquod ingeniosum, suave, et moratum, ex pictura et lemmate constans, quo aliqua gravior sententia indicari solet,' Caussin, *De symbolica Aegyptorum sapientia* fol. 9r-v.

28 On the reception of Horapollo in emblematics, see Drysdall D.L., "A Note on the Relationship of the Latin and Vernacular Translations of Horapollo from Fasanini to Caussin", *Emblematica* 4 (1989) 225-241.

3 Fashionable Emblematics: Renaissance Natural History in the *Polyhistor*

The methodologies and contents of humanist natural history feature in the *De sacra Aegyptorum sapientia* and the *Polyhistor*. Thus, Caussin appeals to the sort of philological and experiential arguments characteristic of this emerging field in his amendments of Mercier's *Hieroglyphica*; he also quotes extensively a poem inspired by Gessner's account of a Renaissance wonder brought into focus by the Great Voyages, namely the bird of paradise.

The early modern natural-historical enterprise grew from the philological repair of corrupt classical sources undertaken by humanism – this philological work was ultimately supplemented by direct observation. It is in the process of making sense of the disfigured codices of Pliny and Dioscorides, among others, that early modern humanists were drawn out of their cabinets into the fields, in order to verify what was verifiable about Pliny's nomenclature of plants, animals and stones.²⁹ The emergence of natural history 'as we know it' described by Ogilvie instantiates a complex, rather than purely oppositional, interplay between textual authority and experience.

While Caussin stated that he was unconcerned by the referential accuracy of his parables since their 'truth' was purely allegorical, he did, however, mercilessly correct Mercier's natural-historical mistakes. Thus, he lifts *verbatim* Mercier's entry on the turtledove:

In which way is the breastfeeding woman, who is also eating best, (depicted).

When they wanted to express the idea of a breastfeeding woman who also eats well, they would paint a turtledove. For among birds, it is the only one that has teeth and breasts.³⁰

and then comments with utmost indignation:

Mercier is gravely deluded here, and where has anyone ever seen turtledoves with breasts and teeth? To be sure either the word *τρυγών* was used for bat, which is the only one among winged animals that can be called in the proper sense *τρυγείν* – as Julius Pollux states – or because the symbols

29 See Ogilvie B., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2004) 87-138.

30 '*Quomodo lactantem mulierem, optimeque nutrientem. Mulierem lactantem ac bene nutrientem ubi pictura exprimere volebant, turturem pingebant. Sola enim inter volucres, haec dentes ac mammas habet*'. Horapollo, *Ori Apolloni Niliaci de sacris notis et sculpturis libri duo*, ed. Jean Mercier (Paris, Jacob Kerver: 1551) 150.

of the bat and of the turtledove were quite similar to one another, in this picture they were so confused that the symbol for turtledove (τρυγών) was put instead of the symbol for bats (νυκτεριδοί). Indeed bats are the only ones among winged animals that have been granted with teeth and breasts by authors.³¹

Caussin's amendment is representative of the sort of critical practice characterising humanist natural history. Since Ermolao Barbaro's *Castigationes pliniana* of 1492, amending a philologically corrupt and experientially inaccurate source had become a commonplace of natural-historical prefaces, and the translator's or editor's way of establishing his credentials as a natural historian, that is, as both a learned humanist and a good observer of nature. Caussin's attack against Mercier is one such *passage obligé*. He castigates Mercier for his lack of common sense, equated with blindness. He identifies two possible causes for the blunder. The first one is philological: Mercier translated wrongly the word τρυγών, which stands for bat, not turtledove: Caussin adduces the authority of the Hellenistic grammarian Julius Pollux (2nd century AD), author of the *Onomasticon*, an encyclopaedic thesaurus of technical vocabularies.³² The second cause is a semiotic one: there was a confusion between the hieroglyphs of the bat and of the turtledove on the original picture from which the interpretation is derived, which led the Greek author of the *Hieroglyphica* to apply wrongly the word τρυγών denoting the turtledove to the bat. Ultimately, the commonsensical experience of nature serves to amend philological and semiotic errors.

Despite Caussin's casual dismissal of referential accuracy in his preface, referential knowledge is integral to the rhetorical effectiveness of his emblems. Like the erudition taught in the Jesuit humanities class, where history features

31 'Gravis hic Merceri hallucinatio, et ubi turturem visi cum mammis et dentibus? Omnino vel nomen τρυγών positum est pro vespertilione, quod unum inter volatilia proprie dicitur τρυγείν, ut author est Julius Pollux, vel Turturis et vespertilionis Symbola sibi invicem proxima, in hac imagine ita fuerunt confusa ut τρυγών αντι νυκτεριδοί poneretur. Soli enim inter volatilia vespertilionis dentes et mammae tribuuntur ab auctoribus.' Caussin, *De symbolica Aegyptorum sapientia* 45.

32 Mercier's and Pollux's texts mention the Greek word for turtledove, namely τρυγών. The words for turtledove and bat respectively throughout the *Onomasticon* are τρυγών and νυκτερες; there is no reference to bats as τρυγών, but Pollux does mention bats with breasts in the *Onomasticon*: Pollux Julius, *Onomasticon*, bilingual Greek-Latin edition by Rudolf Gualther (Frankfurt, Claudius Marnius and heirs of Johann Aubry: 1608) 108, l.33. Caussin suggests yet another explanation in the *De sapientia*: Mercier would have mistaken the stingray (!) for a turtledove (both τρυγών). Caussin, *De symbolica Aegyptorum sapientia* 4, commenting on Horapollo, *De sacris notis et sculpturis* 209.

prominently, natural history is erudition in the service of eloquence, and a poetic feature among others, such as stylistic elegance.³³ This epistemological and poetic continuity between erudite descriptions and their allegorical interpretation is best illustrated in Caussin's emblem of the bird of paradise. Caussin's text opens with a cursory reminder of the wondrous features of this bird: the bird of paradise does not have legs, never touches the earth except if dead, and lays its eggs on the back of its mate.³⁴ Caussin appeals to the authority of the humanist natural historian *par excellence*, Conrad Gessner (1516-1565), and of Maximilianus Transylvanus (1490-1536), author of the first printed account of the bird, which he wrote after his interview with the survivors of Magellan's expedition.³⁵ Caussin then suggests a possible ancient predecessor, Plutarch's *rhynthax*, and concludes with a quotation from the poem *Phoenix* by Claudian (ca. 370-404 AD): the bird of paradise, like the phoenix, can rightfully be said not to endure the cruel contagion of the human world.³⁶ The spatial superiority and physical purity of the bird of paradise easily lends itself to the ethical allegory of the apodosis: the bird of paradise is the perfect figuration of pious men rising above earthly matters. However, the emergence of the allegorical mode in Caussin's text is not detrimental to its referential pretext. Thus, accurate learning and a gracious style justify Caussin's extensive quotation of an allegorical poem inspired by Gessner:

I am adding here below a poem – the child of his outstanding talent – by an eminently learned man, along the same line of argument: I reckon I never saw anything of that sort that was more accurate in its exactness, and more elegant as far as poetic sweetness is concerned.³⁷

33 On erudition in the humanities class, see Pachtler G.M. (ed.), *Ratio studiorum et institutiones scholasticae Societatis Jesu*, in *Documenta Germaniae pedagogica*, vol. 5 (Berlin: 1887) 234 "regulae praepositi provincialis" in the 1599 *Ratio studiorum*.

34 'Monocodiata in aere absque nido, absque arbore, absque saxo, aut altero fulcimento nidificat, et ova parit in dorso sui comparis, ibique fovet, et excludit: numquam ullo loco considet, semper in aere subsistens, quod pene excedit omnem fidem. Maximilianus auctor est, qui addit numquam visam fuisse nisi mortuam, quod tunc deficiente vitali spiritu labatur in terram. Vide Gessnerum [...]' Caussin, *Polyhistor symbolicus* 285. See Arlette Fruet's contribution to this volume.

35 Transylvanus Maximilianus, *De Moluccis insulis* (Cologne, Eucharius Cervicornus: 1523), fol. b.v-r.

36 'Saeve nec humani patitur contagia mundi // par volucres superis', quoted verbatim: Caussin, *Polyhistor symbolicus* 286. Gessner mentions the phoenix, *rhyntax* and bird of paradise in his own entry: Gessner Conrad, *Historia animalium liber III, qui est de Avium natura* (Zurich, Christoph Froschauer: 1555) 611-614.

37 'Subjiciam hic pereruditi viri in eodem argumento poema praestantis ingenii foetum: nihil arbitror me in hoc genere vidisse et subtilitate limatius, et carminis suavitate

The poem opens with the enthusiastic praise of pious heroes uplifted by a divine calling: what better way to praise them but a mannerist description, allegorizing various virtues, of the bird of paradise? Caussin's marginal glosses key onto this poetic hypotypose of the bird the natural-historical features identified by Gessner in his own description. Thus, Caussin notes in the margin to the poetic 'its yellow neck lengthens into its smooth wings': 'feathers from the first cervical vertebra to the beginning of the beak are of a bright yellow, like the purest gold', lifting this note (and many others) almost verbatim from Gessner's account.³⁸ Almost only: the 'smooth wings' of the poems have conveniently replaced the 'hard, rough, and thick' (*dura, crassa, spissa*) feathers of Gessner's description, also erased from Caussin's gloss. While mapping onto the allegorical poem the minutiae of natural-historical description in accordance with the Jesuit understanding of erudition, Caussin's edition of the poem also operates a selection of the relevant features, fit for emblematic framing, within Gessner's text.

The structure of Caussin's own description – from wondrous features to authorities, classical precedents, and finally, to emblematic interpretation – emulates and supplements the humanist natural-historical description one finds in Gessner's *Historia animalium*.³⁹ For the early moderns, describing the birds of paradise entails anatomizing a natural particular, its parts and its habits, *and* (rather than *but*) unravelling a cultural construct, its name and its uses.⁴⁰ In the case of the bird of paradise especially, this cultural construct

elegantius.' Caussin, *Polyhistor symbolicus* 286. The entry is entitled "Monocodiata, sive avis paradisiaca et ΑΠΟΥΕ: contemplatio". Caussin, *Polyhistor symbolicus* 285-288.

38 Poem: 'enodes lentatur cervix ad alas/ Luteola'; Caussin's note: 'Pennae a prima cervicis vertebra ad rostri initium coloris lutei splendentis auri purissimi modo' in Caussin, *Polyhistor symbolicus* 286; Gessner's text: 'Pennae superiorem eius partem a prima cervicis vertebra ad rostri usque initium exornantes, breves sunt, crassae, durae, spissae, coloris luteri insigniter splendentis, et auri purissimi modo.' Gessner, *Historia animalium liber III* 613.

39 Gessner first states his sources: letters and pictures from first-hand witnesses, his own observation of a stuffed specimen – he also mentions the rarity of the bird and its price on the collector's market. He lists its usual mythical features and sometimes ascribes them to authorities ('only dead, footless specimens ever touch the ground' is excerpted from Cardano's *De subtilitate*). He then provides a description of the bird's parts, deduces from it the likelihood of some of its feeding and breeding habits – it is likely that the bird indeed never lands, given the length of its feathers and its lightness. This habitual description seamlessly gives way to the cultural description of the bird: the beliefs attached to it, and its related names. Gessner then quotes a lengthy description of the parts of the bird, transcribed from a letter from the apothecary Melchior Wieland (1520-1589). Gessner, *Historia animalium libri III* 611-614.

40 See Naas V., "Indicare, non indagare: encyclopédisme contre histoire naturelle chez Plinie l'Ancien?" in Zucker A. (ed.), *Encyclopédire: formes de l'ambition encyclopédique dans l'Antiquité et au Moyen-Âge* (Turnhout: 2013) 145-166, and Ashworth W.B., "Emblematic

easily lends itself to its emblematic framing as a symbol of piety: Gessner's description leads the reader from a description "from the parts" to the names of the bird of paradise and the beliefs these encapsulate: the "bird of God", according to Muslims, was supposedly immortal – its emblematic interpretation merely prolongs the natural-historical description.

In Caussin's *Polyhistor*, Gessner's humanist natural history provides the erudition underpinning the poetic hypotypose of a Renaissance wonder transformed into an emblem of piety. Humanist natural history thus provides a brand new repertoire of *mirabilia* to emblematic moral teaching. The fact that Caussin's text does not register amendments in the natural-historical description of the bird which took place between Gessner's time and his own – in particular those made by Carolus Clusius, who ascertained that the bird indeed had feet – is representative of the epistemological and poetic regime of natural history during that period, that is, a predominantly emblematic one.⁴¹ Indeed, while the referential features in the description of the bird of paradise undergo little change between 1555 and 1606, its allegorical and emblematic ones are increasingly numerous and diverse, and justify Ashworth's claim that the emblematic worldview dominates this period and its aftermath.⁴² What seems an intriguing pause, if not lapse, in the retrospective investigation of the emergence of the modern discipline of natural history, is a time of emblematic – and therefore didactic – colonisation of the natural-historical description.⁴³ José Luis García Arranz has described the various emblematic uses of the bird of paradise throughout the seventeenth-century: in his view, it is this very emblematic proliferation incorporated into the natural-historical description that has 'prevented' referential accuracy from becoming the predominant epistemological and poetic feature of the genre.⁴⁴ Caussin's explicit relocation of truth in the moral symbolism of his emblems, as well as his

Natural History of the Renaissance", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 17-37.

41 Clusius Carolus, *Exoticorum libri decem* (Leiden: Christopher Plantin, 1605) 359-363.

42 Ashworth identifies this worldview with Foucault's Renaissance similitude: however, the golden age of the emblematic mode corresponds to the 'Âge classique', which, for Foucault, is the age of the subject-mediated and reflexive representation. See Foucault M., *Les Mots et les choses* (Paris: 2002; first edition. 1966) 32-91.

43 Ogilvie interprets the lasting myths about the bird of paradise as a resistance to facts for want of reliable witnesses. Ogilvie, *The Science of Describing* 248-252.

44 García Arranz J.J., "Paradisea avis: La imagen de la naturaleza exótica al servicio de la enseñanza didáctico-religiosa en la edad moderna", *Norba arte* 16 (1996) 131-152. Arranz notes the variety of Jesuit emblems of the bird of paradise. He mentions: Le Moyne Pierre, *De l'art des devises* (Paris, Sebastien Cramoisy: 1666) 276-277 and 300-301; the fifth emblem of the *Imago primi saeculi Societatis Iesu a provincia Flandro-Belgica* (Antwerp,

selective use of Gessner to 'edit' the allegorical poem on the bird of paradise, seem to vindicate this claim.⁴⁵ They also remind us that early modern natural history as an epistemic and poetic genre was concerned with devising new, emblematic modes of moral pedagogy as well as with providing accurate accounts of natural particulars: these novelties in emblematic pedagogy are, in my view, the very locus of epistemic change.

4 Natural History, Emblems, and Moral Pedagogy

The moral pedagogy of Caussin's emblems relies on two modes of rhetorical effectiveness: affective impact (*movere*) and intellectual pleasure (*delectare*). The emblem is a brutal reminder of one's creatureliness and finitude, as well as a purposefully obscure and artful invention calling for elucidation. Caussin highlights both aspects in the *Polyhistor* by quoting Augustine's and Clement of Alexandria's definitions of 'historical parables': Augustine mentions their ability to move the audience, whereas Clement praises their learned combination of good doctrine and wit.⁴⁶ Caussin's own moral pedagogy offers yet another take on these two, seemingly opposite, principles.

In the case of the bird of paradise, the kinship between Caussin's emblematic lessons and their medieval predecessors of the bestiary tradition is unproblematic. The emblem, like the medieval allegory, functions as a paradigmatic example, in which the natural referent signifies in a striking fashion the intangible loftiness of saintly life. Yet many emblems of the *Polyhistor* display more ambiguous lessons in more oblique ways. Caussin's emblem of another exotic wonder, the Brazilian possum, is one such instance:

Christopher Plantin: 1640) 715; and Hesius Guiljelmus, *Emblemata sacra de Fide, spe, charitate* (Antwerp, Christopher Plantin: 1636) 74-76.

45 Arranz records an open rejection of Clusius's findings by the Spanish Jesuit Juan Eusebio Nieremberg, in his *Curiosa, y oculta filosofia, primera y segunda parte de las maravillas de la Naturaleza, examinadas en varias questionnes naturales* (Henares, María Fernandez: 1649) 378. See Arranz, "Avis paradisea" 142.

46 Clement: 'quae eruditio tanto magis parabolis conveniunt, quanto doctrinam historiarum cum flore ingenii suavius conjungunt' (these [symbols] are all the more appropriate to learned parables that they conjoin more sweetly the moral teaching of histories with the flower of wit); Augustine: 'Si quae autem figurae similitudinum [...] de inferiori creatura ducantur ad dispensationem sacramentorum, eloquentia quaedam est doctrinae salutaris, movendo affectui discentium accommodata [...]' (If one draws similitudes out even of an inferior creature in order to dispense the sacraments, that sort of eloquence is integral to the doctrine of salvation, made fit to move the affect of the pupils) Caussin, *Polyhistor symbolicus* fol. 5.

The puppies of the Cerigo – Children spoil, or the indulgence of mothers.

This is indeed striking in the Cerigos – the name of an animal of the colour and the size of a fox – they show a belly from which so to speak two pockets are hanging in which they carry their young which suck themselves so firmly to the nipples that they do not let go before they are strong enough to forage for themselves.

Apodosis: mothers can be compared with cerigos, who have such great love of worship that they carry on gently feeding their grown-ups and do not endure to be separated violently from their embrace:

like pet pigeons

and princely children asking to have your food chewed for you,

and pettishly refusing breastmilk.⁴⁷

The description of the Brazilian possum, lifted verbatim from a Jesuit cosmographical collection of travel narratives, becomes a striking instance of the excesses of maternal instinct.⁴⁸ Yet the apodosis is not explicitly prescriptive: rather, it tightens the similitude between animals and humans by sketching the equivalent to the possum's constant nursing of, and physical contact with, its puppies: mothers feed their children delicate food and cannot bear them escaping their embrace. The text then summons the children in question, in a quotation from Flaccus Persius's satires. The moral prescription is taught by means of a satirical, rather than allegorical, similitude, which emphasizes syntagmatically an affective creatureliness and its related behaviours: the indulgent mother and the spoilt child are, alongside the possum and its puppies,

47 'Cerigonum catulli: Pueri molliter nutriti, vel matrum indulgentia. Illud vero mirum in Berigonibus, id animanti nomen buxio colore, vulpeculae magnitudine, ex ejus aluo duae dependent veluti manticae: in iis catulos circumfert, et quidem adeo pertinaciter suo quemque; uberi affixos, ura perpetuo fuctu non avellantur, antequam ad pastum ipsi per se progredi valeant. AP: cum Cerigone comparentur matres, quae tantae sunt Φιλοσοφία, ut filios, jam grandiores, molliter nutrant, nec patiantur a suis complexibus divelli: Teneroque columbo, / Et similis Regum pueris pappare minutum / Poscis? et iratus mammae lactare recusas?'. Caussin, *Polyhistor symbolicus* 317.

48 Maffei Jean Pierre, *Historiarum Indicarum libri xvi* (Venice, Damian Zenarro: 1588) fol. 27r. The opening description of the possum catches the reader's attention: 'Attentionis partes sunt res magnae, novae, praeclarae, incredibiles, inusitatae, terribiles, humanae, illustres, obscurae, difficiles [...]' (ways of adducing attention are great things, new ones, famous ones, incredible ones, unusual ones, terrible ones, human ones [typical human traits], glorious ones, obscure ones and difficult ones [...]). Caussin, *De eloquentia*, book iv: "De inventione et locis", ch. 1: "De exordium communibus praeeptis" 315. Italics mine.

one more instance of the same animalistic affect, rather than its allegorical figuration.⁴⁹

The rhetorical triggers of this moral pedagogy are affective and intellectual ones. The affective bound tying mother and offspring is expressed by means of an exotic beast, thus emphasizing the wondrous brutality of this affect, whose potential excess must be kept in check. Caussin's emblem revives the very origin of the traditional representation of vices as beasts: vices are, for him, misguided passions, because they are excessive in their expressions, and/or because they corrupt reason and the will in the determination of the desirable end of one's action.⁵⁰ This emblematic representation is therefore a stark reminder that human beings as passionate ones and therefore potentially vicious ones belong to the same creaturely realm as beasts: they share the same sensitive soul.⁵¹ According to a longstanding scholastic tradition, virtues and vices are 'good' and 'bad' passions ingrained, that is, *habitus*.⁵² Moral pedagogy does not only consist in ensuring rational control over the passions, but in enforcing the 'right' *habitus* by repeatedly dismissing the 'wrong' passion – by making the desired object repulsive, for example – and replacing it with

49 This similitude relies on an analogy of attribution (the possum and the human share an attribute) rather than on analogy of proportion, or a relational analogy (the relationships between the eremite and the world is the ethical equivalent to the spatial ones between the bird of paradise and the world). Analogies of proportions are proper similitudes, unlike analogies of attribution: Pedro da Fonseca, *Dialecticum institutionum libri octo* 392-395.

50 'non immerito quer[i]tur Philo, veluti in arcam Noëmi, bestias, ita in corpus humanum affectionum motus, immanes quasdam et indomitas feras, post hanc naturae labem esse admissas.' (Philo rightly complained that, after the Fall, the motions of affects, those monstrous and untamed wild beasts, were let loose in the human body like the beasts in Noah's ark): Caussin, *De eloquentia*, book VIII: "De affectibus" 460.

51 'Affectio est motus animae rationis expers, ob opinionem boni vel mali. Fons ergo et origo omnium affectuum est anima sentiens; neque enim ex intelligente, aut etiam vegetante, dimanant cum in plantis et in ipsa hominis mente atque intelligentia, nulla sint affectiones.' (Affect is a motion of the soul devoid of reason, according to the opinion of good or evil. Therefore, the origin of all affects is the sensitive soul: indeed they do not spread from the rational or even the vegetative soul, since there are no affects in plants or in the human intellect proper.) Caussin, *De eloquentia*, book VIII: "De affectibus" 460. This anthropological reminder also operates at the other, heroic end of creatureliness. See Caussin, *Polyhistor symbolicus*, "Alexander ebrius moriens cum Baccho expostulat" (Alexander, dying drunk, complains about Bacchus) 154.

52 On *habitus* as ingrained passions, see Aristotle, *Nicomachean Ethics*, book II, 5.2.26-29. For a Jesuit, scholastic account, see Francisco Suarez's commentary on Aquinas' *Summa theologiae* (Prima secundae), "De actibus qui vocantur passiones, tum etiam de habitibus, praesertim studiosis et vitiosis", in *Tractatus quinque theologici ad primam secundae D. Thomae* (Lyons, Jacques Cardon: 1628) 328-432.

the 'right' one.⁵³ Thus, the final satirical quotation ridicules the childishness of the spoilt child unable to let go of his mother, and implicitly promotes affective moderation and autonomy: apt lesson, which manipulates shame to better contain love, for the pupils of the Jesuit classroom. The affective chord struck by the emblem is central to its didactic exemplarity: like history, the emblem offers a vicarious form of experience, thus contributing to the bulk of experiential 'instances' out of which one can learn ethics.⁵⁴

Moreover, the sophisticated rhetorical construct of the emblem provides the very means by which rational control over the passions can happen. Making moral sense of the oblique, satirical rewriting of the exotic possum offers the sort of enticing intellectual game an emblem was meant to provide. Engaging in this hermeneutical activity means distancing oneself from the affects in order to unravel the moral cypher of the emblem: affects thus become the very material onto which author and reader exercise their wits.⁵⁵

5 Conclusion: Emblematic Natural History and The Reflexive Subject

Humanist natural-historical descriptions thus provide Caussin with new material for his emblematic moral pedagogy in the *Polyhistor symbolicus*. These descriptions fulfil the rhetorical requirements of effective moral teaching: as vivid and picturesque representations of natural particulars, they are perfect didactic examples whose *enargeia* can prompt an affective response; and as exhaustive surveys of contemporary knowledge available about a natural particular, they fit the requirement of erudition. In keeping with the poetics and epistemology of the humanist natural-historical description, Caussin's emblems are, in fact, its ethical extensions. They epitomize the 'emblematic moment' in the early modern emergence of natural history: its epistemological significance lies in its symbolic, rather than referential, regime. The similitudes

53 See the conversion of Raymond Lull, featuring as a poet and a womanizer in the *Cour Sainte*, for an example of such habitual reconfiguration: Caussin Nicolas, "L'Empire de la raison sur les passions", in *La Cour Sainte* (Paris, Denis Bechet: 1664), 4 parts in 2 vols. (1.3: 187-188).

54 'id maxime spectabis, ut rerum gestarum notitia serviat instruendis moribus, in alienam quippe vitam ut in speculum intueri decet, in quo cernamus vitiorum foeditatem, pulchritudinem virtutum' (you will mostly ensure that historical knowledge be instrumental to moral education – for it is appropriate that one should look into another life as if in a mirror, in which we delineate the deformity of vices, the beauty of virtues). Jouvancy Joseph de, *Ratio discendi et docendi* (Paris, Barbou frères: 1725 (first edition 1690) 89.

55 The pedagogy of 'affective containment' by means of emblematic wit is evidenced in the emblems commemorating the funerals of Henri IV at La Flèche.

underpinning Caussin's emblems are no longer the ontological structures of natural magic summoned by Foucault in "La Prose du monde". While their rhetorical efficacy is a blunt reminder of the imperfection of creatureliness – the same affects move beasts and men – they exhibit the artificiality of deliberately obscure similitudes designed for the purpose of exercising one's wit, thus transcending those same affects by making them the very matter of intellectual pleasure and rational control. The emblematic worldview of seventeenth-century natural history thus marks one episode in the emergence of the reflexive subject of the 'Âge classique': ideally *maître et possesseur de son naturel*, before becoming *maître et possesseur de la nature*.

Bibliography

- Ashworth Jr W.B., "Natural History and the Emblematic Worldview", in Lindberg D.C. – Westman R.C. (eds.) *Reappraisals of the Scientific Revolution* (Cambridge: 1990) 303-332.
- Augustinus Hipponensis, *Enarrationes in Psalmos*, Dekkers E. – Fraipont J. (eds.), CCSL 38-40, 3 vols. (Turnhout: 1956).
- Carmody F.J. (ed.), *Physiologus Latinus: éditions préliminaires, versio B* (Geneva: 1939).
- Caussin Nicolas, *Polyhistor symbolicus, electorum symbolorum, et parabolarum historicarum Stromata. XII libris complectens* (Cologne, Johann Kinck: 1623).
- Caussin Nicolas, *De symbolica Aegyptorum sapientia* (Cologne, Johann Kinck: 1623).
- Caussin Nicolas, *De eloquentia sacra et humana* (Cologne, Johann Kinck: 1691).
- Caussin Nicolas, *La Cour sainte* (Paris, Denis Bechet: 1664), 4 parts in 2 vols.
- Clusius Carolus, *Exoticorum libri decem* (Leiden, Christopher Plantin: 1605).
- Daston L. – Park K., *Wonders and the Order of Nature (1150-1750)* (New York: 1998).
- Dekoninck R., "Ad imaginem, plaisir et connaissance dans la pensée iconologique de Nicolas Caussin", in Conte S. (ed.), *Nicolas Caussin: rhétorique et spiritualité à l'époque de Louis XIII, Actes du colloque de Troyes (16-17 Septembre 2004)*, coll. *Ars rhetorica* 19 (Berlin: 2007) 317-326.
- Dover P., "Reading Pliny's 'ape' in the Renaissance: The *Polyhistor* of Solinus", in Jason König J. – Woolf G. (eds.), *Encyclopaedism from Antiquity to the Renaissance*, (Cambridge: 2013).
- Drysdall D.L., "A Note on the Relationship of the Latin and Vernacular Translations of Horapollo from Fasanini to Caussin", *Emblematika* 4 (1989) 225-241.
- Evans R.J.W – Marr A. (eds), *Curiosity and Wonder from the Renaissance to the Enlightenment* (Aldershot: 2006).
- Fonseca Pedro da, *Dialecticarum institutionum libri octo* (Cologne, Materne Colin: 1578).

- Foucault M., *Les Mots et les choses* (Paris: 2002; first edition 1966).
- García Arranz, J.J., "Paradisea avis: La imagen de la naturaleza exótica al servicio de la enseñanza didáctico-religiosa en la edad moderna", *Norba arte* 16 (1996) 131-152.
- Gessner Conrad, *Historia animalium liber III, qui est de avium natura* (Zurich, Christoph Froschauer: 1555).
- Grafton A., "The World of the Polyhistor – Humanism and Encyclopedism", *Central European History* 18, 1 (1985) 31-47.
- Hesius Guillemus, *Emblemata sacra de Fide, spe, charitate* (Antwerp, Christopher Plantin: 1636).
- Horapollo, *Hieroglyphica: De sacris notis et sculpturis*, ed. and trans. Jean Mercier (Paris, Christian Wechel: 1548).
- Horapollo, *Ori Apolloni Niliaci de sacris notis et sculpturis libri duo*, ed. Jean Mercier (Paris, Jacob Kerver: 1551).
- Imago primi saeculi Societatis Iesu a provincia Flandro-Belgica* (Antwerp, Christopher Plantin: 1640).
- Itter A.C., *Esoteric Teaching in the Stromateis of Clement of Alexandria* (Leiden: 2009).
- Jouvancy Joseph de, *Ratio discendi et docendi* (Paris, Barbou frères: 1725; first ed. 1690).
- Kenny N., *Curiosity in Early Modern Europe: Word Histories* (Wiesbaden: 1998).
- Kenny N., *The Uses of Curiosity in Early Modern France and Germany* (Oxford: 2004).
- Le Moyne Pierre, *De l'art des devises* (Paris, Sebastien Cramoisy: 1666).
- Maffei Jean Pierre, *Historiarum Indicarum libri xvi* (Venice, Damian Zenarro: 1588).
- Naas V., "Indicare, non indagare: encyclopédisme contre histoire naturelle chez Plinie l'Ancien?" in Zucker A. (ed.), *Encyclopédire: formes de l'ambition encyclopédique dans l'Antiquité et au Moyen-Âge* (Turnhout: 2013) 145-166.
- Nieremberg Juan Eusebio, *Curiosa, y oculta filosofia, primera y segunda parte de las maravillas de la Naturaleza, examinadas en varias questiones naturales* (Henares, María Fernandez: 1649).
- Ogilvie B., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2004).
- Pachtler G.M. (ed.), *Ratio studiorum et institutiones scholasticae Societatis Jesu in Documenta Germaniae pedagogica*, vol. 5 (Berlin: 1887).
- Pollux Julius, *Onomasticon*, bilingual Greek-Latin edition by Rudolf Gualther (Frankfurt, Claudius Marnius and heirs of Johann Aubry: 1608).
- Solinus Caius Julius, *Polyhistor*, ed. Élie Vinet (Toulouse, Enguebert Marnef: 1554).
- Suarez, Francisco, *Tractatus quinque theologici ad primam secundae D. Thomae* (Lyons, Jacques Cardon: 1628).
- Transylvanus Maximilianus, *De Moluccis insulis* (Cologne, Eucharius Cervicornus: 1523).
- Vuilleumier Laurens F., "Eloquence épideictique et doctrine des images: des *Eloquentiae parallela* aux *Electorum symbolorum et parabolorum syntagmata* de Nicolas

- Caussin", in Conte S. (ed.), *Nicolas Caussin: rhétorique et spiritualité à l'époque de Louis XIII, Actes du colloque de Troyes (16-17 Septembre 2004)*, coll. *Ars rhetorica* 19 (Berlin: 2007) 299-316.
- Vuilleumier Laurens F., "Nicolas Caussin: rhétorique et éloquence sacrée", in Vuilleumier Laurens F., *La Raison des figures symboliques à la Renaissance et à l'âge classique* (Geneva: 2000) 173-181.
- Westerhoff J.C., "A World of Signs: Baroque Pansemioticism, the Polyhistor and the Early Modern Wunderkammer", *Journal of the History of Ideas* 62, 4 (2001) 633-650.
- Zucker A. (ed.), *Physiologos: le bestiaire des bestiaires* (Grenoble: 2005).

Natural History and *Divertissement*: J.B. Faultrier's *Traitté general des oyseaux* (1660)

Isabelle Charmantier

Traitté general des oyseaux divisé en sept Livres. Dans lesquels l'on verra parfaitement la difference de leurs naturels et de leurs figures, la diversité de leurs pannages, toutes les sortes de chasses que lon peut pratiquer. La maniere de discerner les Masles des femelles pour garder les meilleurs, ensemble la metode certaine de les bien elever, nourir et entretenir en bonne santé pendant la mue et les autres temps de leur vie avec les Remedes desquels Il se faut servir pour les secourir dans leurs Infirmités et maladies, et generalement dans tous les accidens qui leur peuvent survenir.

Il y a a la fin du present traitté un Calendrier qui est adressé aux chasseurs pour leur donner la connoissance des temps, des passages et des chasses des oyseaux pendant tous les mois de l'année, et ce qui est de plus remarquable dans toutes les actions et façons de faire des animaux avec le moyen de connoistre la difference des temps par le Soleil la Lune et le vol et autres actions des oyseaux.

Fait à Paris l'an 1660.¹



This is the title page of the manuscript *Traitté general des oyseaux*, written in 1660 by former tax collector J.B. Faultrier for the superintendant of France's finances, the ill-fated Nicolas Fouquet.* This manuscript, which lay unknown

* I am grateful to the Earl of Derby for allowing me access to his 1660 copy of Faultrier's *Traitté general des oyseaux* at Knowsley Hall. I am grateful also to the staff at the Thomas Scheler bookshop in Paris for allowing me to consult the 1661 manuscript. I would like to thank Professors Tim Birkhead and Mark Greengrass for their invaluable support and advice.

1 Faultrier J.-B., *Traitté general des oyseaux* (Paris: 1660), Knowsley Hall Library. The original punctuation and spelling of the text have been respected, except for the transcription of j (i) and u (v).



FIGURE 7.1 J.B. Faultrier's *Traitté general des oyseaux* (1660): cover and binding, with Fouquet's coat of arms. Licence granted courtesy of the Rt Hon. The Earl of Derby 2013

PHOTO T.R. BIRKHEAD

in the library of Knowsley Hall until 2004, also exists in a second version, dated 1661, and now on sale at the Librarie Thomas Scheler in Paris.² Both manuscripts, neither of which included illustrations, were probably copied out by scribes, as the very regular scripts suggest, and both were dedicated to Fouquet. Fouquet wielded considerable power in France prior to his downfall and life-long imprisonment by Louis XIV in September 1661. The manuscripts' covers, in red morocco binding with a gold stamp of Fouquet's coat of arms, a squirrel rampant, indicate that they were meant to figure in his celebrated library.³

2 Birkhead T.R. – Butterworth E. – Balen B. van, "A Recently Discovered Seventeenth-Century French Encyclopaedia of Ornithology", *Archives of Natural History* 33, 1 (2006) 109-134; Charmantier I. – Greengrass M. – Birkhead T.R., "Rewriting Renaissance Ornithology: Jean Baptiste Faultrier's 'Traitté General Des Oyseaux' (1660)", *Archives of Natural History* 35, 2 (2008) 319-338.

3 Cordey J., *La bibliothèque du surintendant Fouquet* (Paris: 1925); Saunders E.S., "Politics and Scholarship in Seventeenth-Century France: The Library of Nicolas Fouquet and the College Royal", *Journal of Library History* 20, 1 (1985) 1-24.

The historical importance of Faultrier's manuscript is twofold. Firstly, works on animals were relatively rare in seventeenth-century France. No works concerning birds appear to have been published between Pierre Belon's *Histoire de la nature des oyseaux* (1555) and Claude Perrault's descriptions of a few species in his two-volume *Mémoires pour servir à l'histoire naturelle des animaux* (1671 and 1676).⁴ Despite the fact that a second edition was never published, Belon's *Histoire de la nature des oyseaux* had an enduring impact on the study of birds and was used as a source not only by contemporaries such as Aldrovandi, but also by later naturalists such as Jan Jonston.⁵ Aldrovandi's successful *Ornithologia*, published at the turn of the century, may also explain the gap.⁶ Faultrier's work is especially interesting, written as it was just a few years before the foundation of the Académie des Sciences (1666). Yet the fact that it remained a manuscript, and not one which was ever circulated, must be taken into consideration.⁷ Secondly, what makes this work intriguing to the historian is that here is a work concerning birds – by all accounts then, a natural historical work. Yet, Faultrier never once designates his work as one of 'natural history', but rather more simply as a 'treatise of birds'. Moreover, Faultrier himself was not an established naturalist or scholar, but an unknown tax collector, trying like many others to attract the attention of a wealthy patron. His work therefore invites us to reformulate and rethink the meaning of 'histoire naturelle' in mid-seventeenth century France, and the many other ways in which seventeenth-century authors could write about the natural world.

Research in the 'Archives nationales' in Paris revealed that having started his career as a tax collector, a judicious second marriage into a family with useful connections to the king's household enabled Faultrier to become controller of the hunting lodge and falconries of the king of France in the mid-1630s. His remarriage highlights his pursuit of social advancement, and was a classic case of patronage and clientelism so prominent in middling and high circles of French society in the first half of the seventeenth century.⁸ The arms

4 Martin H.-J., *Livre, pouvoirs et société à Paris au XVII^e siècle (1598-1701)* 2 vols. (Geneva: 1969) 236.

5 Letessier F., (1975) "Vie et survivance de Pierre Belon", *Actes du Colloque Renaissance-Classicisme du Maine, Le Mans, 1971* (Paris: 1975) 107-128.

6 Conrad Gessner's own ornithological work also contributed to it. See Paul Smith in this volume.

7 Grains of sand, presumably from the sand used to dry ink, were found between some of the pages upon examination of the 1660 manuscript, indicating that it was hardly, if ever, opened.

8 Kalas R.J., "Marriage, Clientage, Office Holding, and the Advancement of the Early Modern French Nobility: the Noailles family of Limousin", *Sixteenth Century Journal* 27, 2 (1996) 365-383; Kettering S., "Patronage in Early Modern France", *French Historical Studies* 17, 4 (1992) 839-862.

of Fouquet on the manuscripts and the dedicatory preface, couched in the language of courtesy characteristic of a patron-client relationship, indicate that the work was intended as a gift to the finance minister of finances, probably in the hope of further patronage.⁹ Two letters from Faultrier to Jean-Baptiste Colbert, Fouquet's successor, disclose that the author experienced hardship after Fouquet's arrest and imprisonment.¹⁰ Nothing is known of what became of him thereafter.

No link has so far been found between Faultrier and any circles of natural-historical learning, apart from his work within the king's hunting lodge and falconries. Even there, the work he undertook was more the work of a finance controller, and might not have given him any direct involvement in royal hunts. Yet Faultrier refers to his extensive experience in hunting: 'J'ay toute ma vie esté beaucoup porté a l'exercice de la chasse par la pratique de laquelle j'ay tiré beaucoup d'experience de ce qui concerne le present traitté.' Apart from his professed experience and knowledge of hunting, Faultrier relied on book learning to write his treatise, 'par la lecture continuelle que i'ay faite de tous les auteurs qui ont escrit des oyseaux', '[une] estude particuliere', a study which turned out to be 'un divertissement suivant en cela beaucoup plus mon inclination, qu'aucune autre consideration que j'eusse pû avoir'.¹¹

While much historical research has focused on the well-known writers of ornithology – men like Belon, Conrad Gessner or Ulisse Aldrovandi in the sixteenth century, or John Ray in the seventeenth century – here is an opportunity to appraise seventeenth-century ornithology outside of these familiar circles). The analysis of Faultrier's manuscript allows us to glimpse into the ways in which natural-historical knowledge was processed and written about by the 'amateurs,' to use the term in its original sense, who produced works not meant for publication. Faultrier not only fully integrated previous scholarship on birds into his work, but he also used his knowledge of birds to seek patronage, emphasising the entertainment value of song-birds or birds used in hunting, for example, with a view to securing his own social advancement. This article starts by giving a brief account of Faultrier's use of scholarly knowledge of birds. While Faultrier relied mostly on well-known natural-historical sources of the sixteenth century, he also idiosyncratically included information from bird-keeping books, travel accounts, and husbandry manuals. I will then

9 Zemon Davis N., "Beyond the Market: Books as Gifts in Sixteenth-Century France: The Prothero Lecture", *Transactions of the Royal Historical Society* 33 (1983) 69-88; Kettering S., "Gift-Giving and Patronage in Early Modern France", *French History* 2, 2 (1988) 131-151.

10 See two letters at the Bibliothèque Nationale in Paris from Faultrier to Jean-Baptiste Colbert, where Faultrier begs Colbert for a post: 31 January 1663 (Mélanges Colbert 114, fols. 558-559) and 9 August 1664 (Mélanges Colbert 123, fol. 244).

11 Faultrier, *Traitté des oyseaux* 8-9.

investigate the creative principles at work in the *Traitté des oyseaux* focusing essentially on uses of the French language and what they reveal of Faultrier's aims when he wrote the text in the late 1650s. Finally, the concluding part will reflect on the epistemological meaning of the work, and the role that curiosity played in the construction of knowledge of the natural world. I will show that both the contents and the poetics of Faultrier's *Traitté des oyseaux* point towards an audience of lay 'curieux', rather than the scholarly naturalists he was emulating.

1 'Donner la parfaite cognoissance'

As Faultrier very candidly admits in the prefatory matter, under the section, 'de l'utilité du present ouvrage', he was very aware that his work could not compare to that of previous natural histories.

Ayant a vous discourir des moyens de cognoitre et de sçauoir gouverner toutes sortes d'oyseaux Je me suis proposé de declarer tres particulièrement leur origine et leur naturel encore que quelques personnes pourroient s'imaginer que c'est une peine et un travail que je me donne en vain, puis qu'enfin je n'en puis dire autre chose, que ce qu'en ont dit Aristote, Pline, Albert le Grand, tout plein d'autres auteurs, naturalistes, et medecins, qui ont escrit de la vie des animaux: ou bien ce qu'en ont artificieusement inventé les poetes.

Faultrier's treatise is essentially a digest of the available ornithological literature of the time. The bulk of the treatise is more or less directly borrowed from the works of two of the most famous naturalists: Aldrovandi's *Ornithologia* (3 vols., 1599-160; borrowings from which constitute 43% of Faultrier's work) and Belon's *Histoire de la nature des oyseaux* (1555; 10%).¹² From these, Faultrier derived most of his descriptions of birds' physical traits, their habitats, and their behaviour. Moreover, Faultrier combined both Aldrovandi's and Belon's classifications in dividing his manuscript into seven groups of birds, or 'Livres'. This classification, according to Faultrier, was essentially based on differences in birds' behaviour:

¹² In-depth analysis of the content of Faultrier's work can be found in Charmantier I., "L'Ornithologie entre Renaissance et Lumières: le *Traitté general des oyseaux* de Jean-B. Faultrier (1660)", *Anthropozoologica* 46, 1 (2011) 7-26; Charmantier – Greengrass – Birkhead, "Rewriting Renaissance Ornithology".

J'ay divisé tout le contenu du present traitté en sept livres, afin d'éviter la confusion, et j'ay suivi autant que j'ay pu en cela, le naturel different des oyseaux, assemblant ceux qui se rencontrent avoir les mesmes moeurs, et semblables fassons de faire.¹³

That Faultrier's classification was to some extent considered, rather than merely copied out, is apparent from the fact that he disagreed with some of Belon's and Aldrovandi's classificatory decisions. He decided, for example, and contrary to both Belon and Aldrovandi, to place swallows within his fourth group, rather loosely entitled 'des oyseaux qui se rencontrent partout pays, et vivent de toutes sortes de viandes'. Both the use of a classification to structure the work, and the predominance of natural-historical sources indicate that Faultrier was well aware of the existing learned literature and made full use of it in his treatise.

However, Faultrier's treatise, despite its heavy reliance on natural historical works, was not driven by a quest for knowledge. While Faultrier did pledge 'de declarer tres particulierement leur origine [des oiseaux] et leur naturel', that does not seem to have been his primary aim. His treatise is structured like a work of natural history, relying on a specific classification of birds, yet the emphasis is not on their place within the classification – that emphasis can especially be found in the works of William Turner, or Faultrier's contemporaries Francis Willughby and John Ray.¹⁴ Rather, the classification is there to give order and structure to the book:

l'ordre est ce qui est le plus necessaire dans toutes sortes d'ouvrages; [...] j'ay estimé qu'il estoit a propos, et absolument necessaire de l'establir en ce lieu, pour donner une intelligence plus claire, et plus parfaite, de l'histoire des oyseaux, desquel j'entreprends de traiter.¹⁵

This is the *only* instance when Faultrier uses the term 'histoire' to describe his own work: he does so in the context of describing his classification – indeed, the classification is one of the only historical, or more precisely natural-historical,

¹³ Faultrier, *Traitté des oyseaux* 10.

¹⁴ William Turner, *Avium praecipuarum, quarum apud Plinium et Aristotelem mentio est, brevis et succincta historia* (Cologne, Johann Gymnich: 1544); John Ray, *The Ornithology of Francis Willughby* (London, John Martyn: 1678). Ray and Willughby had also provided classifications of plants, birds and fishes for John Wilkins, *An Essay towards a Real Character, and a Philosophical Language* (London, Samuel Gellibrand and John Martyn: 1668).

¹⁵ Faultrier, *Traitté des oyseaux* 9.

features of the whole of the treatise (in the tradition of Belon's 'histoire naturelle' for example). What Faultrier instead wants to achieve is an entertaining account of birds as sources of human pleasure: either because they can be hunted, or because a caged bird's plumage and song are beautiful:

i'ay entrepris [ce travail] plus volontiers dans la croyance que i'ay eu qu'il seroit receu comme un divertissement par toutes les personnes, qui aiment l'exercice de la chasse et qui sont curieuses des belles choses.¹⁶

By supplementing the scholarly knowledge of ornithology with sections highlighting the entertainment value of birds, Faultrier aimed to give a more rounded account of birds: 'sous l'esperance que j'ay que lon tirera beaucoup de profit, et d'utilité de la peine que je prens, a donner la parfaite cognoissance de toutes ces choses'.¹⁷ The originality of Faultrier's work stems from the fact that, unlike Jan Jonston, another compiler who published a compendium of ornithological knowledge in 1650, he did not confine himself to Renaissance natural-historical sources in works.¹⁸ Rather, in order to fulfil his aim of providing his readers with information on how to keep, breed and hunt birds, Faultrier also read a whole array of sources not usually associated with learned natural history. In his *Traitté*, Faultrier refers to a number of falconry books, Italian bird-keeping works, husbandry manuals, and two further miscellaneous titles: André Thevet's *La cosmographie universelle* (1575, for two species only) and Étienne Binet, *Essay des merveilles de la nature* (1622), to which I will return later.¹⁹

Faultrier's method was based on compilation, and it is apparent from the identical structure of each chapter (one per species) that Faultrier must have used a commonplace book to gather all the existing evidence on each species, and that he started his research by reading the natural histories of Aldrovandi and Belon. Most chapters usually start with the natural history of each bird:

16 Ibidem 30.

17 Ibidem 8.

18 Jonston Jan, *Historiae naturalis de avibus libri VI* (Frankfurt, Matthaeus Merian: 1650).

19 The other sources that I have been able to identify in Faultrier's work are the following: Franchières Jean de, *La Fauconnerie* (Paris, Abel l'Angelier: 1618), which at the time also included treatises by Guillaume Boucher, Artelouche de Alagona and Guillaume Tardif; Estienne Charles, *L'Agriculture et maison rustique* (Rouen, Jean Berthelin: 1632), Harmont Pierre, *Le Miroir de fauconnerie* (Rouen, Clement Malassis: 1650), Mancini Cesare, *Ammaestramenti per allevare, pascere, e curare gli ucelli* (Milano, Filippo Ghisolfi: 1645), Valli da Todì Antonio, *Il canto degl'augelli* (Rome, Heredi di Nicolo Mutij : 1601).

its physical description, often painstakingly detailing the plumage feather by feather, its behaviour, its habitat. These excerpts, often quite long, are all from Aldrovandi or Belon, sometimes from both. More practical information then follows, especially regarding the birds used in falconry and song-birds. This is taken from falconry manuals, or from husbandry and bird-keeping works. The chapters, when they relate to a bird used for hunting purposes, end with a section about hunting. It is here that Faultrier inserts what can be identified as his own personal comments, although these are very rare. In most chapters, extracts from up to five different authors follow each other in quite a seamless way, hiding from an unsuspecting reader the fact that they are essentially that: extracts from other people's work that have been patched together one after the other. The chapter on the quail, for example, starts with a description of the bird, with sections copied from both Aldrovandi and Belon, then continues with an account of its hunt from Antonio Valli da Todi's bird-keeping book. It ends with Faultrier's own comments on hunting:

Il y a aussy des ailliers a Caille desquels lon se sert avec l'appeau, ou bien avec la grande Retz qui est un'espece de tirasse que lon etend sur les blez ou autres grains pendant le mois d'avril may et juin, toutes ces chasses sont certaines et bien epronées.²⁰

In addition to the natural historical description of birds and the practical information relating to their entertainment value, Faultrier also included a few 'emblematic' elements.²¹ Contrary to Foucault's analysis of seventeenth-century developments in natural history where emblematics were said to no longer be present, Faultrier does describe fabulous birds such as the phoenix, and includes other tropes such as the pelican striking its breast, commonly found in sixteenth and seventeenth-century emblem books.²² Thus he writes:

20 Faultrier, *Traitté des oyseaux* 312-315.

21 Charmantier I., "Emblematics in Ornithology in the Sixteenth and Seventeenth Centuries", *Emblematica* 18 (2010) 79-109.

22 Foucault M., *Les Mots et les choses. Une archéologie des sciences humaines* (Paris: 1966). On natural history and emblem books see Ashworth W.B., "Emblematic Natural History of the Renaissance", in Jardine N. – Secord J.A. – Spary E. (eds.), *Cultures of Natural History* (Cambridge: 1996) 17-37; Harms W., "On Natural History and Emblematics in the 16th Century", in *The Natural Sciences and the Arts. Aspects of Interaction from the Renaissance to the 20th Century. An International Symposium* (Uppsala: 1985) 67-83.

[Belon] dit pareillement que quand le serpent a tué les petits du Pelican (qui fait pour l'ordinaire son nid contre terre) que le pere se lamante et se frape la poitrine de maniere qu'il en fait sortir le sang, duquel les petits estant arrosés ils retournent en vie.²³

Other emblematic descriptions include the crane's vigilance, or the swamp-hen detecting a housewife's adultery.²⁴ These inclusions, possibly the 'poets' artificial inventions' referred to in the passage quoted above, are not as numerous as in the works of Renaissance naturalists (one thinks of Gessner's and Aldrovandi's especially) but for Faultrier they were part and parcel of the bird's history.

Given that Faultrier borrowed information from at least twelve different authors, it is remarkable that his work reads so smoothly. Faultrier strove to apply stylistic coherence to the borrowed material which constituted his treatise. Throughout the work, he cited some 77 authors, only 12 of which he actually read. Out of these 12, he only mentioned six by name (Aldrovandi, Alagona, Belon, Harmont, Tardif, and Thevet), and this he seems to have done quite randomly. A casual reader would therefore assume that Faultrier had indeed read Aristotle (mentioned some 78 times), Albert the Great (22 times), Oppian (10 times), or Pliny (33 times), to name the most often quoted. By citing ancient authorities (mostly encountered in Aldrovandi), Faultrier managed to give a scholarly outlook to his compilation. The fact that Faultrier often left these quotations in the original Latin, also highlighted the scholarly ambitions of the treatise. Conversely, Faultrier did not consistently refer to authors he had actually read and copied from – these can only be deduced from a careful comparison of texts.

Faultrier derived his information from sources in three languages: French, Latin and Italian. He managed to generate stylistic coherence by translating his sources into French and adapting the older French of some of the late medieval falconry treatises. For instance, Guillaume Tardif's *Faulconnerie* (first printed in 1493) was consistently updated by Faultrier, who changed 'geline' into 'poule', 'saillier' into 'sortir', 'tierce' into 'troisième', or 'connil' into 'lapin'. Similarly, Faultrier transformed much of Franchières's *Fauconnerie* (written in 1443, printed in 1567), modifying and simplifying most of the sentences. That Faultrier decided to write his treatise in French from Latin and Italian is indicative of his level of learning – which he modestly plays down:

²³ Faultrier, *Traitté des oyseaux* 498.

²⁴ Ibidem 581, 612.

j'espere que ceux qui prendront la peine de jeter la veue sur mon Livre, excuseront plus facilement les defauts qu'ils y trouveront; puisqu'en effet ce n'est aucunement ma profession d'escire, ny de composer des Livres, n'ayant d'estude que ce qu'il est necessaire d'avoir, pour ne passer pas pour tout a fait ignorant.²⁵

More importantly, his choice of French is indicative of his motives for producing such a treatise, which an analysis of the poetics of the work will help to bring to light.

2 'De la satisfaction et du divertissement'

Faultrier firmly places his work within the category of practical writings. While offering some measure of knowledge of the nature of birds, his treatise will also concentrate on:

des moyens que lon doit pratiquer pour nourrir, et gouverner les oyseaux qui donnent du contentement, et de la satisfaction à l'homme, selon leurs qualitez, et complexions, l'Intelligence pour sçauoir connoitre les déffauts qu'ils ont en leurs natures; la maniere de les soulager dans leurs maladies, et infirmités, et pour les maintenir sains, et en bonne disposition: enseigner pareillement de quoy doit estre composée leur mangeaille, et leur pature, donner la pratique de toutes leurs chasses, et marquer les temps de leurs passages, de leurs mues, et de leurs vies, avec la methode certaine de discerner les masles des femelles, pour faire election des meilleurs, toutes ces choses m'ont semblé assés considerables tant pour la satisfaction des personnes qui se plaisent a leurs chasses, et a s'en servir a la chasse de leurs semblables, ou a les tenir en cage, et en voliere, que pour le bien, et la santé des oiseaux.²⁶

What Faultrier wants to offer, then, is more of a practical treatise on the subject of birds, rather than what he sees as a theoretical natural history of birds in the manner of Gessner, Aldrovandi or Belon, as he writes himself:

²⁵ Ibidem 9.

²⁶ Ibidem 7-8.

Bien que d'autres escrivains ayent traité de cette mesme matiere il y a neantmoins cette difference, qu'ils se sont simplement attachés a la Theorie, ne declarant que ce qui appartenoit à l'intelligence de ces choses en général: Mais dans cet ouvrage, outre la Theorie, je traiteray de la vraye pratique, et experience, qui est beaucoup plus certaine, et constante, et c'est a quoy le present traité s'achemine tout droit.²⁷

This is why Faultrier defines his work as a treatise rather than a natural history. Throughout the work, there is not a single mention of the expression 'histoire naturelle' and the word 'histoire' is only used three times, and twice in relation to Aldrovandi's ornithology, which Faultrier sees as 'une histoire des oyseaux', or a history of birds.²⁸ Taking the conflicting use of *traité* and *histoire*, both present in the full title of Jean Bauhin's *Traicté des animaux aians aisles* (1593), as an example, Laurent Pinon has argued that by the end of the sixteenth century, 'while *traité* is an inquiry into the available literature, the *histoire* is the fruit of Bauhin's own investigation'.²⁹ Certainly Faultrier's work bears this conclusion out. Nowhere in his treatise does Faultrier claim to have conducted any sort of first-hand observations or experiments on the birds he describes. His only personal comments, which are extremely rare, are confined to one or two sentences about his experience of hunting certain birds, such as the jackdaw or the unidentified 'fig-eater'.³⁰ The fact that Faultrier himself consistently designates his work as a 'traité', based on other authors' works, firmly places it in the category of what Gianna Pomata and Nacy Siraisi have called 'erudite empiricism'.³¹

A treatise, especially one written in the vernacular, had altogether different aims than a Latin natural history. Schwerdt's bibliography of hunting and hawk-ing books, which excludes translations or legal works, contains 17 works with birds as their subjects and published in seventeenth-century France, out of a total of 80 in Europe.³² Of these 17 publications, only one, Nicolas Rigault's *Rei*

27 Ibidem 9.

28 Ibidem 529, 607.

29 Pinon L., "Conrad Gessner and the Historical Depth of Renaissance Natural History", in Pomata G. – Siraisi N. (eds.), *Historia. Empiricism and Erudition in Early Modern Europe* (Cambridge, Mass. – London: 2005) 260. The full title of Bauhin's work is *Traicté des animaux aians aisles, qui nuisent par leurs piqueures ou morsures, avec les remèdes; outre plus une histoire de quelques mouches ou papillons non vulgaires apparues en l'an 1590, qu'on a estimé fort venimeuses*.

30 Faultrier, *Traitté des oyseaux*, 409, 678.

31 Pomata G. – Siraisi N. (eds.) *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge, Mass. – London: 2005)

32 Schwerdt C.F.G.R., *Hunting Hawking Shooting, Illustrated in a Catalogue of Books Manuscripts Prints and Drawings*. 2 vols. (London: 1928) vol. 1.

accipitrariae scriptores (1612) was written in Latin. All the rest were written in French, comprising mainly falconry manuals (6), husbandry manuals containing instructions on fowling or bird-keeping (5), and dictionaries (2). Similarly, outside France, works written in the vernacular concentrated on more practical aspects of ornithology: bird-keeping and fowling were especially popular subjects in Italian (18 publications). Conversely, natural histories such as Jonston's ornithology (1650) and Willughby's and Ray's first edition of their ornithology (1676) were published in Latin.³³ Similarly, exotic ornithology, such as Nieremberg's *Historia naturae* (1635) or Piso's *De Indiae utriusque re naturali et medica* (1658), based on Marcgraf's work, were also written in Latin.³⁴ It seems therefore, that the more practical treatises of ornithology tended to be published in the vernacular, whereas natural histories of ornithology, modelled on the works of Gessner and Aldrovandi, were predominantly published in Latin (with a few exceptions, of course, such as Ray's English translation of his and Willughby's *Ornithology* in 1678).

One of Faultrier's main sources, Belon's *Histoire de la nature des oyseaux*, was also written in French, making it a rarity in sixteenth-century natural-historical works. Arguably, Faultrier might not have been able to write his own treatise had Belon not been available in French, since Belon provided Faultrier with most of the French equivalents of the birds' Latin names found in Aldrovandi. Belon himself was a staunch supporter of writing in French. Dedicating his *Observations de plusieurs singularitez ...* (1553) to his patron the cardinal de Tournon, he highlighted the fact that he was writing in French for the public good:

afin que nostre nation, qui sçait quelle affection vous portez a l'utilité publique, se sente aucunement du fruict de ceste mienne peregrination, dont vous estes auteur: & qu'un bien est d'autant plus louable, qu'il est plus commun: i'ay traicté ceste mienne observation en nostre vulgaire François.³⁵

By choosing French over Latin, Faultrier was ultimately restricting his audience to a French one, and not an international scholarly one.

33 Ray John, *Francisci Willughbeii de Middleton in Agro Warwicensi, Armigeri, e Regia Societate, Ornithologiae Libri Tres* (London, John Martyn: 1676).

34 Nieremberg Juan Eusebio, *Historiae naturae, maxime peregrinae, libris XVI* (Antwerp, ex officina Plantiniana, Balthasar Moretus: 1635); Piso Willem, *De Indiae utriusque re naturali et medica: libri quatuordecim* (Amsterdam, Louis and Daniel Elzevier: 1658).

35 Belon Pierre, *Les observations de plusieurs singularitez et choses memorables, trouvées en Grece, Asie, Judée, Egypte, Arabie, et autres pays estranges* (Paris, Gilles Corrozet: 1553), Epistre, fol. a.iii v.

It is worth focusing on the insertion of two extracts from Étienne Binet's *Essay des merveilles de nature* (1621) which not only point to Faultrier's deliberate use of the French language, but also give an indication of what type of audience he was aiming for. Binet has been described as a devout encyclopaedist; his book was extremely popular throughout the seventeenth century and went through more than twenty editions in thirty years.³⁶ His interest in the French language lay mainly in its correct use: it was a matter of finding the adequate words, in order to emulate the French of the court, considered by Binet a model to be followed. The aim of the book was rhetorical: the *Merveilles* of the title really refers to the marvels of language, and Binet was at pains to emphasise the importance of the correct usage of French: 'de beaux mots bien propres et bien assis sans affectation, croyez-moi qu'ils ont la meilleur grace du monde, ce sont des Roses, des Perles, des Estoilles'.³⁷ Binet organised the *Merveilles* by subject, such as birds, bees, flowers, etc. He started the work with the art of venery, deeming this sport the most royal activity, and deserving to come first in the book. Falconry featured in the third chapter, followed by, in order, chapters on birds, the phoenix, the peacock, the fly, the nightingale, the bee, honey, and the swallow. Subsequently, more abstract chapters tackle the subjects of war, storms, duelling, or gardening. Binet's topics are mapped onto conceptions of civility and politeness which emerged powerfully in the French cultural discourse of the early Bourbon monarchy. His vocabulary provided a language to express politeness through the observation of the wonders of nature: the cultivation of flowers, the song of the nightingale, or the pleasure of seeing a falcon cleave through the air.³⁸ Although Binet's work was specifically aimed at future Jesuits to help them with precise technical vocabulary, it was published in a troubled period, when conversation kept at bay the more difficult subjects of theology or political dissent, helping to foster civility and politeness.³⁹

Faultrier copied two specific passages from Binet: the first one lists words describing individual bird calls. This very Rabelaisian passage is relatively short:

36 Laurens P., "Au tournant du siècle, une synthèse fragile: l'*Essai des merveilles* d'Etienne Binet", in Lafond J. – Stegmann A. (eds.), *L'Automne de la Renaissance 1580-1630* (Paris: 1981) 65-80.

37 Binet Etienne, *Essay des merveilles de nature, et des plus nobles artifices* (Rouen, Romain de Beauvais: 1621), Epistre au Lecteur; Genette G., "Le parti pris des mots", *Mercure de France* 353 (1965) 640-651.

38 Hyde E., *Cultivated Power. Flowers, Culture and Politics in the Reign of Louis XIV* (Philadelphia: 2005) 122.

39 Muchembled R., *La société policée: politique et politesse en France du XVI^e au XX^e siècle* (Paris: 1998).

Des differens cris et ramages des oyseaux et des termes desquels il se faut servir pour les exprimer. La Colombe roucoule, le Pigeon caracoule, la Perdrix rouge cacabe, le Corbeau crouille ou croüace, lon dit du Coc cocqueliner, du Coc d'Inde glougoter, les Poules glousser, le poulet pepier ou pioler, des Cailles carcailler et niargauder, du Gay cajoler, du Rossignol gringuenoter, du Gresillon gresillonner, de l'Hirondelle gazoüiller, du Milan huir, du Iars jargonner, des Grues craquer ou trompeter, du Pinson frigoter babiller, du Hibou huer des Huppés pupuler, des Merles siffler, des Perroquets et des Pics causer, des Tourterelles gemir, de l'Alouette tirelirer, le Moineau dit pillery et la Perdrix grise thierry. Lon dit du Paon qu'il a la teste de serpent, la queue d'un Ange et la voix du diable.⁴⁰

The second passage concerns the technical vocabulary to be used in falconry. It is a longer section, of six and a half manuscript pages, describing the words to be used when training a falcon, including words related to the falcons themselves and the accessories used in falconry, such as the jesses or the lure.⁴¹ Faultrier rearranged the order of Binet's sentences, and from the content it is possible to deduce that he used the 1657 tenth edition. Most of all, he did not cite Binet's name or work in either of the passages. What is also strange for the reader is that these two sections, so markedly different in content from the rest of the treatise, are not introduced by anything other than the chapter heading.

The inclusion of material from Binet becomes more understandable in the context of the vocabulary devoted to entertainment and curiosity which is used in the treatise, particularly in the sections about hunting and bird-keeping. As we have seen, one of Faultrier's aims was to promote his reader's entertainment, or as he called it 'divertissement', and much of the vocabulary reflects its importance. The word 'divertissement' comes up 18 times in the work, and especially in the introductory chapters:

J'espere neantmoins qu'ils [les lecteurs] y rencontreront de la satisfaction, et du divertissement, puisque lon y pourra apprendre en peu de temps tout ce qu'il est besoin de scavoir pour l'Intelligence entiere, et la parfaite cognoissance, de tout ce qui concerne les oyseaux.⁴²

⁴⁰ Faultrier, *Traitté des oyseaux* 14.

⁴¹ Ibidem 101-108.

⁴² Ibidem 9.

The same can be observed for the word 'plaisir', found 28 times in the treatise, and often used in conjunction with 'divertissement'. Also prominent in Faultrier's vocabulary are words pertaining to beauty, curiosity and wonder. Curiosity as a cultural phenomenon has been extensively studied by historians, who have charted the rise of curiosity from the mid-seventeenth to the mid-eighteenth century.⁴³ Early modern curiosity was positively associated with objects and knowledge. As Lorraine Daston and Katherine Park have shown, curiosity was often associated with wonder, although Neil Kenny also highlighted the indeterminate nature of the relationships between 'curiosity' and 'neighbouring terms' such as 'interesting', 'useful', 'rare' or 'exotic'.⁴⁴ The vocabulary used by Faultrier mostly reflects wonder: 'admirable/admiration', 'merveille', 'estonnant/e', 'extraordinaire/ment', although it should be emphasised that in about half of the cases, such uses are taken from other authors (Aldrovandi in most cases). The family terms linked to 'curieux', including all adjectives, nouns and adverbs, are used 14 times throughout the treatise. In Faultrier's work, as in numerous other works of the seventeenth century, curiosity and entertainment were closely interconnected: nature, by shedding its aura of secrecy, and by appearing more open to scrutiny, became comparable to a play. 'La nature n'est plus un livre, c'est un *théâtre*', wrote La Mothe le Vayer.⁴⁵ It indicated a shift from the book of nature to the theatre of nature, where witnessing the small wonders and the incessant little dramas unfold was to be enjoyed and savoured, not only by learned scholars of natural history, but also by the curious gentlemen and women of the Parisian *salons*.

3 'Presenter cet ouvrage aux Curieux'

The inclusion of Binet's work, as well as the vocabulary of enjoyment and curiosity should be seen in conjunction with the notion of 'honnêteté' which developed in France from the 1600s. For Nicolas Faret, whose treatise *L'Honneste homme ou l'art de plaire à la cour* (1630) was repeatedly reprinted throughout

43 Daston L. – Park K., *Wonders and the Order of Nature* (New York: 1998); Kenny N., *Curiosity in Early Modern Europe. Word Histories* (Wiesbaden: 1998); Kenny N., *The Uses of Curiosity in Early Modern France and Germany* (Oxford: 2004); Pomian K., *Collectors and Curiosities. Paris and Venice, 1500-1800* (Cambridge: 1990); Schnapper A., *Le Géant, la licorne, la tulipe* (Paris: 1988).

44 Kenny, *Curiosity in Early Modern Europe* chapter 5.

45 Quoted in Merlin H., "Curiosité et espace particulier au XVII^e siècle", in Jacques-Chaquin N. – Houdard S. (eds.) *Curiosité et libido sciendi de la Renaissance aux Lumières* (Paris: 1998) 122.

the seventeenth century, the quintessential 'honnête homme' was a courtier whose principal aim was to please the king, in order to gain his esteem and consideration, but also to reap the rewards, for example, in terms of post and favour at court.⁴⁶ The concept of the 'honnête homme' later developed into something quite different, as can be seen in the works of Antoine Gombaud, chevalier de Méré, who wrote several essays on this topic in the second half of the seventeenth century.⁴⁷ By 1660, the aristocratic conception of 'honnêteté' indicated an ability to please, and was linked very closely to the concepts of politeness, propriety ('bienséance'), and good taste ('bon goût').⁴⁸ The aim of an 'honnête homme' was to entertain and to avoid tedium, or *ennui*, by keeping his conversation light and avoiding pedantic subjects such as science.⁴⁹ Therefore, two types of culture began to clash in the second half of the seventeenth century in France: the learned one ('savante'), and the worldly one ('mondaine').⁵⁰ The 'honnête gens' rejected learned bookish culture in favour of conversation and entertainment. An 'honnête homme' might also be a 'curieux', and one who partook in polite behaviour not only through conversation, but also through activities such as hunting.

Faultrier's *Traitté des oyseaux* sits at the junction of these two cultures, between 'culture savante' and 'culture mondaine'. On the one hand, his treatise relies extensively on scholarly ornithological works of well-known naturalists. Faultrier repeatedly signalled his scholarly credentials in flashes of learning: by quoting ancient authors, by quoting in Latin, and by referring to such authorities as Aldrovandi and Belon. On the other hand, his repeated use of the vocabularies of entertainment and curiosity pulls such learning towards the sphere of polite conversation. His inclusion of passages from Binet's *Merveilles* emphasises the fact that his intended audience did not consist of naturalists and scholars like those who later founded the Académie Royale des Sciences, but rather one of refined 'curieux', epitomised by Nicolas Fouquet and his

46 Faret Nicolas, *L'Honneste homme ou l'art de plaire à la cour* (Paris, Toussaint du Bray: 1630); Magendie M., *La Politesse mondaine et les théories de l'honnêteté, en France, au XVII^e siècle, de 1600 à 1660*. 2 vols (Paris: 1925) 355.

47 See for example the works of Gombaud Antoine, Chevalier de Méré, *De l'esprit. Discours* (Paris, Denys Thierry and Claude Barbin: 1677); *De la conversation. Discours* (Paris, Denis Thierry and Claude Barbin: 1677).

48 Dens J.-P., *L'Honnête homme et la critique du goût. Esthétique et société au XVII^e siècle* (Lexington: 1981); Mornet D., *Histoire de la littérature française classique 1600-1700: ses caractères véritables, ses aspects inconnus* (Paris: 1947), Moriarty M. *Taste and Ideology in Seventeenth-Century France* (Cambridge: 1988)

49 France P., *Politeness and its Discontents. Problems in French Classical Culture* (Cambridge: 1992) 56.

50 Denis, *L'Honnête homme et la critique du goût* 70-71.

entourage. This he clearly articulated when he wrote in his preface: 'Ces raisons [...] n'ont pû neantmoins me détourner de presenter cet ouvrage aux Curieux'.⁵¹

Fouquet belonged in Parisian literary *salons*, such as those of Madame du Plessis-Guénégaud or Madame du Plessis-Bellièvre, and dabbled in poetry from time to time. When Madame du Plessis-Bellièvre's parrot died, in 1653, Fouquet wrote a light-hearted and ironic sonnet in its honour. Fouquet and his wife held a literary *salon* in the 1650s, which, with the help of Paul Pellisson's connections, soon became 'le centre du mouvement littéraire français'.⁵² As Bury points out, Fouquet became 'le protecteur et le promoteur d'une littérature d'essence mondaine et féminine, dont le paradigme est la conversation'.⁵³ The writers, poets, playwrights and scholars who constituted Fouquet's circle all strove to promote and enhance the French language and French culture: Pierre Corneille, whom Fouquet called back from his self-imposed exile from the stage; Jean de La Fontaine, whose commissioned poem *Le Songe de Vaux* vaunted the wonders of his patron's château of Vaux le Vicomte; Charles Perrault, whose first poems were praised by Fouquet; and Molière, who performed his first plays under Fouquet's patronage.⁵⁴ Fouquet's château at Vaux provided a perfect setting for light entertainment, parties, and worldly conversations – and escapism from the dreary atmosphere of the court during the minority of Louis XIV.⁵⁵ After Fouquet's downfall, the court of Louis XIV would in many ways model itself on Vaux, and on its emphasis on courtly entertainments. As Madame de Motteville wrote: 'la plus considérable affaire de la cour, et celle ou l'on paroïssoit penser davantage, étoit le divertissement et le plaisir'.⁵⁶

Beyond his literary patronage, Fouquet also displayed an interest for natural curiosities. He was a keen collector of flowers, in particular anemones, and the

51 Faultrier, *Traité des oyseaux* 7.

52 Petitfils J.-C., *Fouquet* (Paris: 2005) 262-266.

53 Bury E., "La 'culture Fouquet': précieuses et galants", in Grell C. – Malettke K. (eds.), *Les Années Fouquet. Politique, société, vie artistique et culturelle dans les années 1650* (Münster: 2001) 108.

54 On Fouquet's patronage, see Chatelain U.V., *Le Surintendant Nicolas Fouquet, protecteur des lettres, des arts et des sciences* (Paris: 1905); Sweetser M.-O., "Le Mécénat de Fouquet: la période de Vaux et ses prolongements dans l'œuvre de La Fontaine", in Mousnier R. – Mesnard J. (eds.), *L'Âge d'or du mécénat (1598-1661)* (Paris: 1985) 263-272.

55 Bury E., "Espaces de la République des Lettres: des cabinets savants aux salons mondains", in Darmon J.-C. – Delon M. (eds.), *Classicismes XVII^e-XVIII^e siècles, Histoire de la France littéraire* 2 (Paris: 2006) 88-116.

56 Madame de Motteville, *Mémoires* (1615-1666), *Nouvelle collection des mémoires relatifs à l'histoire de France* 24 (Paris: 1881) 110.

well-tended gardens at his house in Vaux le Vicomte included an aviary.⁵⁷ At his other house in Saint-Mandé, in addition to cultivating rare flowers, medicinal herbs and citrus trees, he also had a laboratory, where the doctor Jean Pecquet was encouraged to conduct experiments.⁵⁸ Faultrier, probably composing his *Traitté* in the late 1650s, would have been aware of Fouquet's little court of Vaux, and of the values it promoted – especially of its *penchant* towards *curieux* entertainment and pleasure. For what were, in all probability, entirely self-interested reasons to do with patronage and social advancement, Faultrier endeavoured to produce a pleasing and harmonious work, designed to appeal to the socialites of seventeenth-century Paris, whilst appealing also to Fouquet's known curiosity for the natural world. By focusing on birds, Faultrier found a suitable subject to entertain an audience solely interested in light and pleasant topics. Aurélia Gaillard has shown how, just a few years later at the Ménagerie in Versailles, birds were more heavily represented than any other animals, both alive in the park and in paintings, tapestries or statues. Birds, with their bright colours, were more suited to a pleasure garden that was ornamental and decorative, and from which ferocious species were mostly absent.⁵⁹

The *Traitté general des oyseaux* was therefore a hybridisation of works appealing to aristocratic pleasure and scholarly tradition. Faultrier's intended audience consisted not only of aristocrats but perhaps more precisely of 'honnêtes hommes', members of a rising elite, much like Fouquet, and to a lesser extent Faultrier himself, whose social ambitions meant that they took an active part in the cultural and intellectual life of the country. Their curiosity about the natural world was an expression of this. Faultrier's treatise, written in French, and with a particular attention to the entertainment value of birds through descriptions of fowling and bird keeping, was not a work for an audience of 'scientists' but rather an audience of 'honnêtes hommes', bourgeois and Parisian elites. It is debatable whether Faultrier's work should be viewed as a work of natural history. If one is to classify according to content, Faultrier's *Traitté* can be situated between Renaissance and Enlightenment, and between natural history and bird-keeping; by its style of writing and its target audience,

57 Hyde, *Cultivated Flowers*; Hyde E., "Flowers of Distinction: Taste, Class and Floriculture in Seventeenth-Century France", in Conan M. (ed.) *Bourgeois and Aristocratic Cultural Encounters in Garden Art, 1550-1850* (Washington, D.C.: 2002) 77-100; Mukerji C., *Territorial Ambitions and the Gardens of Versailles* (Cambridge: 1997) 106-08; Petitfils, *Fouquet*; Schnapper, *Le Géant, la licorne, la tulipe* 47.

58 Chatelain, *Nicolas Fouquet*.

59 Gaillard A., "Bestiaire réel, bestiaire enchanté: les animaux à Versailles sous Louis XIV", in Mazouer C. (ed.), *L'animal au XVII^e siècle* (Tübingen: 2003) 187-89.

between worldly and learned cultures. More than a scholarly work on birds, Faultrier's compilation tells us a great deal about the social uses of ornithology in mid-seventeenth century France, where writing about birds could establish one's respectability and reputation as an 'honnête homme'. As Binet wrote: 'C'est un grand plaisir quand le vol de l'Oiseau s'accorde avec le vol de nos plumes, ou de nos langues.'⁶⁰

Bibliography

- Aldrovandi Ulisse, *Ornithologiae*. 3 vols. (Bologna, Francisco de Franciscis Senensem: 1599-1603).
- Ashworth W.B., "Emblematic Natural History of the Renaissance", in Jardine N. – Secord J.A. – Spary E. (eds.), *Cultures of Natural History* (Cambridge: 1996) 17-37.
- Belon du Mans Pierre, *Les observations de plusieurs singularitez et choses memorables, trouvées en Grece, Asie, Judée, Egypte, Arabie, et autres pays estranges* (Paris, Gilles Corrozet: 1553).
- Belon du Mans Pierre, *L'Histoire de la nature des oyseaux* (Paris, Guillaume Cavellat: 1555).
- Binet Estienne, *Essay des merveilles de nature, et des plus nobles artifices* (Rouen, Romain de Beauvais: 1622).
- Birkhead T.R. – Butterworth E. – Balen B. Van, "A Recently Discovered Seventeenth Century French Encyclopaedia of Ornithology", *Archives of Natural History* 33, 1 (2006) 109-34.
- Blair, A. "Humanist Methods in Natural Philosophy: The Commonplace Book", *Journal of the History of Ideas* 53, 4 (1992) 541-551.
- Bury E., "Espaces de la République des Lettres: des cabinets savants aux salons mondains", in Darmon J.-C. – Delon M. (eds.), *Classicismes XVII^e-XVIII^e siècles. Histoire de la France littéraire* 2 (Paris: 2006) 88-116.
- Bury E., "La 'culture Fouquet': précieuses et galants", in Grell C. – Malettk K. (eds.), *Les années Fouquet. Politique, société, vie artistique et culturelle dans les années 1650* (Münster: 2001) 101-110.
- Charmantier I., "Emblematics in Ornithology in the Sixteenth and Seventeenth Centuries", *Emblematika* 18 (2010) 79-109.
- Charmantier I., "L'ornithologie entre Renaissance et Lumières: Le 'Traitté general des oyseaux' de Jean B. Faultrier (1660)", *Anthropozoologica* 46, 1 (2011) 7-26.

60 Binet, *Essay des merveilles de nature* 53.

- Charmantier I. – Greengrass M. – Birkhead T.R., "Rewriting Renaissance Ornithology: Jean Baptiste Faultrier's 'Traitté General des Oyseaux' (1660)", *Archives of Natural History* 35, 2 (2008) 319-338.
- Chatelain U.V., *Le surintendant Nicolas Fouquet, protecteur des lettres, des arts et des sciences* (Paris: 1905).
- Cordey J., *La bibliothèque du surintendant Fouquet* (Paris: 1925).
- Daston L. – Park K., *Wonders and the Order of Nature* (New York: 1998).
- Dens J.-P., *L'"Honnête homme" et la critique du goût. Esthétique et société au XVII^e siècle* (Lexington: 1981).
- Estienne Charles, *L'Agriculture et maison rustique* (Rouen, Jean Berthelin: 1632).
- Faret Nicolas, *L'Honneste homme ou l'art de plaire à la cour* (Paris, Toussaint du Bray: 1630).
- Faultrier Jean-Baptiste, *Traitté general des oyseaux*, Mss, 2 copies (Paris: 1660, 1661).
- Foucault M., *Les Mots et les choses. Une archéologie des sciences humaines* (Paris: 1966).
- France P., *Politeness and its Discontents. Problems in French Classical Culture* (Cambridge: 1992).
- Franchières Jean de, *La Fauconnerie* (Paris, Abel l'Angelier: 1618).
- Gaillard A., "Bestiaire réel, bestiaire enchanté: les animaux à Versailles sous Louis XIV", in Mazouer C. (ed.), *L'animal au XVII^e siècle* (Tübingen: 2003) 185-198.
- Genette G., "Le parti pris des mots", *Mercure de France* 353 (1965) 640-651.
- Gombaud, Antoine de, Chevalier de Méré, *De l'esprit. Discours* (Paris, Denis Thierry and Claude Barbin: 1677).
- Gombaud, Antoine de, Chevalier de Méré, *De la conversation. Discours* (Paris, Denis Thierry and Claude Barbin: 1677).
- Harmont Pierre, *Le Miroir de fauconnerie ou se verra l'instruction pour choisir, nourrir, traicter, dresser et faire voler toute sorte d'oyseaux* (Rouen, Clement Malassis: 1650).
- Harms W., "On Natural History and Emblematics in the 16th Century", in *The Natural Sciences and the Arts. Aspects of Interaction from the Renaissance to the 20th Century. An International Symposium* (Uppsala: 1985) 67-83.
- Hyde E., *Cultivated Power. Flowers, Culture and Politics in the Reign of Louis XIV* (Philadelphia: 2005).
- Hyde E., "Flowers of Distinction: Taste, Class and Floriculture in Seventeenth-Century France", in Conan M. (ed.), *Bourgeois and Aristocratic Cultural Encounters in Garden Art, 1550-1850* (Washington, D.C.: 2002) 77-100.
- Jonston Jan, *Historiae naturalis de avibus libri VI* (Frankfurt, Matthaeus Merian: 1650).
- Kenny N., *Curiosity in Early Modern Europe. Word Histories* (Wiesbaden: 1998).
- Kenny N., *The Uses of Curiosity in Early Modern France and Germany* (Oxford: 2004).

- Laurens P., "Au tournant du siècle, une synthèse fragile: l'Essai des merveilles d'Etienne Binet", in Lafond J. – Stegmann A. (eds.), *L'automne de la Renaissance 1580-1630* (Paris: 1981) 65-80.
- Letessier F., "Vie et survivance de Pierre Belon", in *Actes du Colloque Renaissance-Classicisme du Maine, Le Mans, 1971* (Paris: 1975) 107-128.
- Magendie M., *La politesse mondaine et les théories de l'honnêteté, en France, au XVII^e siècle, de 1600 à 1660*. 2 vols. (Paris: 1925).
- Mancini Cesare, *Ammaestramenti per allevare, pascere, e curare gli ucelli, li quali s'ingabiano ad uso di canatre* (Milano, Filippo Ghisolfi: 1645).
- Martin H.-J., *Livre, pouvoirs et société à Paris au XVII^e siècle (1598-1701)*. 2 vols. (Geneva: 1969).
- Muchembled R., *La société policée: politique et politesse en France du XVI^e au XX^e siècle* (Paris: 1998).
- Petitfils J.-C., *Fouquet* (Paris: 2005).
- Pinon L., "Conrad Gessner and the Historical Depth of Renaissance Natural History", in Pomata G. – Siraisi N.G. (eds.), *Historia. Empiricism and Erudition in Early Modern Europe* (Cambridge, Mass. and London: 2005) 241-268.
- Pomian K., *Collectors and Curiosities. Paris and Venice, 1500-1800* (Cambridge: 1990).
- Saunders E.S., "Politics and Scholarship in Seventeenth-Century France: The Library of Nicolas Fouquet and the College Royal", *Journal of Library History* 20, 1 (1985) 1-24.
- Schnapper A., *Le géant, la licorne, la tulipe* (Paris: 1988).
- Schwerdt C.F.G.R., *Hunting Hawking Shooting, Illustrated in a Catalogue of Books Manuscripts Prints and Drawings*. 2 vols. (London: 1928).
- Sweetser M.-O., "Le mécénat de Fouquet: la période de Vaux et ses prolongements dans l'œuvre de La Fontaine", in Mousnier R. – Mesnard J. (eds.), *L'âge d'or du mécénat (1598-1661)* (Paris: 1985) 263-272.
- Valli Da Todi Antonio, *l canto degl'augelli* (Rome, Heredi di Nicolo Mutij: 1601).

At the Borders of the Metropolis: Writing the Natural History of Paris in the Eighteenth Century

Stéphane Van Damme

The eighteenth century witnessed a proliferation of surveys on the nature of large cities. The inventory of the flora and fauna of Paris for example is a constant concern from the late seventeenth to the mid-nineteenth century. We can list no less than thirty manuscripts containing preserved flora of Paris or its surrounding areas. These documents conduct a systematic survey of plant species found locally. The idea of the changing nature of Paris and of its boundaries emerged from these books and manuscripts. The eighteenth century is usually deemed to be a time of tensions between nature and the city. Rather than opposing nature and urbanism, Enlightened Naturalists attempted to answer the following question: does their metropolis have a nature?¹ The ways in which they made metropolitan nature visible and gave it new authority are the topics of this paper. Identifying this metropolitan nature was part of a broader reflection about the identification of metropolitan *grandeur*.² By looking at precisely the question of the metropolitan limits as an epistemic and urban issue, I would like to explore the co-production of nature and metropolis during the eighteenth-century. The issue of the city's boundaries became central because it ended up representing either the identification of urban environment and nature, or their separation. Recent works in environmental history have started to reformulate this classical opposition and to challenge its related general assumptions in history of science.³ Their authors contend that the issue of urban nature reappeared in the historiographical arena because urban

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- 1 Daston L. – Pomata G., “The Faces of Nature: Visibility and Authority”, in Daston L. – Pomata G. (eds.), *The Faces of Nature in Enlightenment Europe* (Berlin: 2003) 1-16.
 - 2 Spary E., “The Nature of Enlightenment”, in Golinski C.W. – Schaffer S. (eds.), *The Sciences in Enlightened Europe* (Chicago – London: 1999) 272-306. On the passage from a classical city to a metropolis, see Garrioch D., *The Making of Revolutionary Paris* (Berkeley: 2002).
 - 3 Cronon W., *Nature's Metropolis: Chicago and Great West* (Chicago: 1992). Stradling D., *The Nature of New York: An Environmental History of the Empire State* (Ithaca: 2010). Publications on Boston include: Rawson M., *Eden on the Charles: The Making of Boston* (Cambridge, Mass: 2010). Quenet G., *Versailles: une histoire naturelle* (Paris: 2014).

nature was historicized while the metropolis was naturalized in the same move. In natural history, the transition from a fixist system of classification of nature inherited from the medieval period to a genealogical approach implied a generative perspective and the idea of natural and social transformation.

In the Parisian context, I will argue first that writing natural history did not only occur within the limits of a single genre grounded in Renaissance natural-historical cultures, but embraced a variety of social practices. The variety of natural-historical genres underlines the ambiguity and tensions which occurred in these attempts to establish a new definition of the metropolitan environment and to justify said attempts. This variety also shows the invention of practices of appropriation of nature which go beyond traditional natural-historical genres. Moreover, writing natural history was not only done by natural historians: it was a common practice shared by different epistemic communities in Paris: pharmacists, botanists and gardeners, horticulturalists, but also geologists and engineers. Attention to the physical context of the urban environment originated from different types of concerns. Nature in Paris was seen as a medicinal or commercial resource, as well as raw material to be classified and, ultimately, as a natural territory. By accounting for the 'generic experimentations'⁴ associated with these various uses and conceptions of nature, I would like to argue that literary and epistemic genres and writing practices relating to social and cultural practices shaped a multi-faceted natural history of Paris – itself a significant instance of metropolitan natural territory – in the eighteenth century. In order to do so, I will focus on textual forms and scribal practices alongside rhetorical techniques and published genres, rather than on illustrations and pictures.⁵

1 *Codex Parisiensis: Authority, Authorship and Legal Boundaries*

I will first investigate the making of the codex genre in the metropolitan context by envisaging it from a legal perspective. Apothecaries and pharmacists feature among the many professions interested in the nature of *Ancien régime* cities. It has been noted that the establishment of pharmacopoeia in Paris in

4 I use here the concept produced by Stalnaker J., *The Unfinished Enlightenment. Description in the Age of the Encyclopedia* (Ithaca: 2010) 7. See more broadly Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996).

5 Spary E.C., "Scientific Symmetries", *History of Science* 62 (2004) 1-46. See also Spary E.C., *Eating the Enlightenment: Food and the Sciences in Paris, 1670-1760* (Chicago: 2012).

the seventeenth century played a role in maintaining corporatist and local identities. The presence of apothecaries and later, of pharmacists in academies, university faculties and urban institutions gave their disciplines a central importance in upholding their city's singularity. Let us begin with the case study of the first published Parisian pharmacopoeia in 1638. At the beginning of the seventeenth century, apothecaries still drew inspiration from Nicolas and Mesué's antidotaries, but they also sought to establish more updated pharmacopoeias. The first edition of this collection, published in 1638, carried the title *Codex medicamentarius seu pharmacopoea parisiensis*, and mentions the medical faculty of the University of Paris. This text includes a preface to the reader, a catalogue of the doctors in the faculty of medicine in Paris in 1638, and finally a list of medicines organized in alphabetical order. The work also presents a long extract from the registers of the Parliament which explains the context of its publication.⁶

by decree on 3 August 1590, it has been ordered, that for the public good the Faculty of Medicine will assemble in order to elect ten Doctors from within its ranks, who will draw up in writing a Dispensary, containing the botanical herbs and composites, which the Apothecaries of Paris must stock in their shops. And since the Court was informed of negligence, they named the 25 October 1590 twelve Doctors of the Faculty, whom the aforementioned Court enjoined to draw up in writing the aforementioned Dispensary, and to certify this to the Court in the following three months.⁷

The regulation of remedies was one element in the process of incorporating apothecaries and surgeons that the king had begun in 1598 throughout the kingdom:

6 *Codex medicamentarius seu pharmacopoea Parisiens ex mandato facultatis medicina Parisiensis in lucem edita*, M. Philippo Harduino de S. Jacques Decano (Paris, Olivier de Varennes: 1638).

7 'par Arrest du troisième Aoust mil cinq cens quatre-vingt dix, auroit été ordonné, que pour le pour le bien public la Faculté de Médecine s'assembleroit pour eslire dix Docteurs d'icelle, qui redigeroient par escrit un Dispensaire, contenant les simples et composez, que les Apothicaires à Paris doivent tenir en leurs boutiques. Et depuis ladite Cour avertie de la négligence, auroit le vingt-cinquième Octobre mil cinq cens quatre-vingt dix sept nommé douze Docteurs de la Faculté, auxquels la dite Cour auroit enjoint rediger par escrit ledit Dispensaire, et en certifier la Cour dans trois mois lors ensuivant' (Ibidem).

Also prohibit with the same penalties all Apothecaries and grocers from giving any medicine to the sick with other recipes or prescriptions than those of the Doctors of the aforementioned Faculty or those to be approved either by them, or by the Doctors-ordinary of the King and by those of the Royal blood.⁸

This decision explicitly held sway in Paris and gave the Provost of Merchants the jurisdiction to see to its execution. The letters patent produced during the first two thirds of the seventeenth century illustrate the dissemination and rise of corporations of apothecaries in the provinces. The foundation of these corporations was also the result of a demand for recognition emanating from local apothecaries themselves. Thus in Pontoise, the 1653 foundation of the corporation seems to have been the outcome of negotiation between a group of practitioners and the civil lieutenant representing the king. The corporation's right to regulate the profession in a region defined by the jurisdiction of the royal court was acknowledged.⁹ This right was generally conferred upon the largest town in the region.

Secondly, this decision was integral to policies aiming at distinguishing between grocers and apothecaries in Paris. The power to prescribe medicines henceforth acknowledged the expertise of apothecaries. The 1638 publication of the Codex was contemporary to the foundation of the society of apothecaries of Paris, which highlighted their distinctiveness from the grocers, even if the separation of the two groups existed since 1353. The publication of the Codex sought to clarify the statutes and in particular regulate entry processes.¹⁰

Finally, the 1638 Codex testifies to the desire to rejuvenate and redefine medical knowledge in the capital city. The increasing power of the doctors in the Faculty over apothecaries made it necessary to gather in a common pharmaceutical book the compilations produced by local doctors.¹¹ In 1574, the Faculty of Montpellier imposed its own pharmacopoeia, the Faculty of Poitiers produced an antidotary in 1611; Paris had its own in 1638. This triple demand, at once a corporatist, professional, and mercantile one, accounts for the fact that this qualification was maintained. This phenomenon took place in other European capitals as well. Thus, in seventeenth-century London, the

8 'Fait aussi defenses sur mesmes peines à tous Apothicaires et Espiciers, de donner aucune medecine aux malades sur autres receptes et ordonnances que des Docteurs en ladite Faculté ou qui seront approuvez d'icelle, des Medecins ordinaires du Roy et de ceux du sang Royal' (Ibidem).

9 Brockliss L. – Jones C., *The Medical World of Early Modern France* (Oxford: 1997) 183.

10 Ibidem 184.

11 Ibidem 197.

establishment of the London codex fuelled rivalries and disputes between authorized and illicit practitioners. In this context, the monopoly over local knowledge becomes the site of antagonisms between authors.¹² By contrast, in Paris, the definition of the codex by the faculty leaves the field open for other editorial and scientific formulae which aim at proposing rules and principles for other pharmacopoeias. After 1672 Parisian presses printed the *Pharmacopée royale* by Moyse Charas, which became the favourite against the *Collectanea pharmaceutica* of Louis Penicher, commissioned by the Parisian apothecaries. Likewise, in 1697, the *Pharmacopée universelle* of Nicolas Lémery was one more instance of this desire to overcome a strict institutional or local logic.

However, the publication history of the Parisian Codex was not limited to the polemical and repressive context of the seventeenth century: the Codex was reprinted three times during the eighteenth century, in 1732, 1748 and 1758 under the name of different authors.¹³ These new leases of life might be the result of the constant updating of medical remedies. While the 1638 edition consisted of a small in-quarto volume of 129 pages, that of 1758 contained 359 pages and included a preface to the members of the Faculty of medicine as well as several indices. While the text was heavily revised, and reorganized in three parts – preparations, Galenic compositions, chemical operations –, it carried on including the Parliament's decrees. Alongside the printed text of the privilege, these decrees anchored the Codex within the realm of local publication by designating Parisian apothecaries as the book's principal readers and users.¹⁴ Moreover, these decisions locate the book within a legal genealogy by referring to the bulk of legal statements on the question. On the other hand, the preface underlines the scientific dimension of accumulation and rejuvenation of natural knowledge, in particular by rejecting the most 'obsolete' and 'useless' compounds.¹⁵ Corollary to this, anonymous authors are replaced by learned men of recognized authority: the codex of 1732 is the work of Étienne-François Geoffroy, and that of 1758, the work of Jean-Baptiste Boyer. The latter features with all his titles on the title page: knight of the Order of Saint-Michel,

12 Cooper A., *Inventing the Indigenous: Local Knowledge and Natural History in Early Modern Europe* (Cambridge: 2007).

13 *Codex medicamentarius seu pharmacopoea Parisiens in lucem edita, decano M. Joanne-Baptista Boyer* (Paris, Pierre-Guillaume Cavelier: 1758).

14 The text reminds the reader of the royal declarations of March and July 1696, the royal edict of March 1707, the statement of March 1732, which stipulates that 'Apothecaires de la Ville et Banlieue de Paris seront tenus de se conformer au nouveau Dispensaire fait par la Faculté de Médecine de Paris.'

15 *Codex medicamentarius* IX.

royal doctor, book censor, member of the Royal Society of London. While the first edition obviously had an author, Philippe Hardouin, he was deemed a *scriptor* rather than a real author. This growing attention to the author partook in the attempt to shape a new form of institutional authorship reflecting the steady increase of printed texts and the shift from oral forms of censorship and dissemination to printed ones. Local knowledge became printed knowledge, which prompted in turn a new conception of authorship. Institutional authorship was the prerogative of an individual expert.¹⁶

Within this framework, the hypothesis that the growing generality of the content of the Codex reflected changes in the production of, and control over, pharmacological knowledge must be tested. Indeed these successive editions may well be the result of the competition regarding the control of medicine production between various institutions. Alongside the Faculty, the Provost of the king's Hotel, and – after 1728 – a royal commission were responsible for guaranteeing that one followed licit processes in making medical remedies: they did so by delivering from March 1731 onwards a patent for the making and distribution of remedies. Set up in the Louvre, this commission worked in close collaboration with the office of the *lieutenant général de police*.¹⁷ Such competition further contributed to an overall climate of institutional tension between the Faculty, the guild, and the royal police witnessing their monopoly slipping out of their grasp. Moreover, the growing generality of the Codex might also testify to a desire to advertise the universality and scientific credentials of the natural knowledge produced by the Faculty in contrast with the heterogeneous and contingent nature of regulations issued by guilds. In his 1762 *Elémens de Pharmacie*, Antoine Baumé makes the following comments about the works of the faculty:

A number of famous medical faculties have undertaken to transcribe the Pharmaceutical formulae, in conjunction with Apothecaries, in order to constitute Codices, containing the compositions which must all be carried by Apothecaries, so that Doctors might be certain of the medicines which they prescribe. These works produced for the public health, demand the greatest protection from Magistrates, to guide them by the hand and ensure that the compositions contained within them might be followed with the greatest exactitude.¹⁸

16 Biagioli M. – Galison P. (eds.), *Scientific Authorship. Credit and intellectual Property in Science* (London: 2003).

17 Brockliss – Jones, *The Medical World of Early Modern France* 628.

18 'Plusieurs célèbres Facultés de médecins ont entrepris de rédiger des formules de Pharmacie, conjointement avec les Apothicaires, pour en former des Codes, contenant les compositions qui doivent se trouver toutes faites chez les Apothicaires, afin que

One must then investigate the geographical limits of the applicability of such knowledge, and of its related legal clauses. Does the area of Paris merely encompass the city and its suburbs, or does it include the wider region under the jurisdiction of the Parlement, for example? One might venture to suggest that the production of a Parisian pharmacopoeia fulfils a double function. First of all, many kinds of practical knowledge were progressively formalized and standardized into disciplinary knowledge. These forms of knowledge, which were beforehand little subject to institutional rules and constraints and were grounded in the communities of practitioners – pharmacists and the like – progressively took shape. Linking one's trade to the name of a city was the first step towards general recognition, but also – and this is the second point – towards the establishment of a Parisian regulation of medical remedies.

2 Selling Parisian Nature, Publishing Trading Catalogues

Other practices of writing contributed to order metropolitan nature, and provided guidelines about the development of its related commercial metropolitan market, of curiosities in particular. In this section, I will contrast two positions which generated natural-historical genres and norms: the one of gardeners and horticulturalists, and the one of merchant of natural curiosities.

Firstly, the trade in plants managed by horticulturalists (*pépiniéristes*) grew alongside the Flower market in Paris, due to the rising fashion of private gardens.¹⁹ Philippe-Victoire Lévêque de Vilmorin (1746-1804), a seed merchant who would become member of the Society of Agriculture of the Seine department during the French Revolution, started his trade prior to it and sold his seeds and plants in Paris.²⁰ Sarah Easterby-Smith has showed the importance of such commercial practices in the establishment of classification.²¹ In his catalogue of plants, trees and bushes published in 1783 by the nursery

les Médecins pussent être surs des médicamens qu'ils ordonnent. Ces Ouvrages faits pour la sureté publique, demandent la plus grande protection des Magistrats, pour tenir la main à ce que les compositions qu'ils renferment soient suivies avec la dernière exactitude.' Baumé Antoine, *Elémens de pharmacie théorique et pratique* (Paris, La veuve Damonville, Jean-Baptiste-Guillaume Musier fils, Pierre-François Didot Jeune, Louis-Guillaume De Hansy: 1762) 4.

19 Velut C., *La rose et l'orchidée: les usages sociaux et symboliques des fleurs à Paris au XVIII^e siècle* (Paris: 1993).

20 *Catalogue des plantes, arbres, arbrisseaux, et arbustes, dont on trouve les graines, des bulbes et du plant chez les sieurs Andrieux et Vilmorin* (Paris, Chez lesdits Sieurs Andrieux et Vilmorin: 1778).

21 Easterby-Smith S., *Cultivating Commerce. Cultures of Botany in Britain and France, 1760-1815* (Cambridge: 2018).

Vilmorin-Andrieux, all of the products – including the catalogue, which cost 24 sols – are sold in his shop, ‘quai de la Mégisserie, à l’Enseigne du Roi des Oseaux, près le Caffé du Midi’.²² Written for the *amateurs* as well as designed for the trade of gardeners, the catalogue made plenty of room for the description of each seeds and plants, yet constrained within the strict limits set by Vilmorin:

We have, as in previous instances, attached to each Species and Variety, in as fewer words as it was possible, the character that make each distinct, the season when it yields, the time and cares required for its culture, and its Latin name intended for Foreigners to whom our nomenclature is not familiar.²³

But more importantly, it provided information about the gardening practices in the wake of the *Le Bon jardinier* almanach published by Vilmorin. Twenty pages preceding the catalogue proper reminded the gardener of the main seasonal calendar for each seed.²⁴ According to Sarah Easterby-Smith, the *pépinière* Vilmorin-Andrieux stemmed from the marriage of Philippe Lévêque Vilmorin with Adélaïde, daughter to Pierre Andrieux, who owned the shop ‘Quai de la messagerie’. In 1780, when Adélaïde died, Vilmorin became the manager of the company and retained the name Vilmorin-Andrieux.²⁵ Among his buyers were *amateurs* of rare plants, in which his Paris shop had specialised. Those collectors of roses or exotic fruits were also members of the Republic of Letters. By examining the accounts of the company, Sarah Easterby-Smith argued convincingly that the knowledge of those seed merchants was disseminated through their correspondences, as they were also in contact with botanists and learned naturalists. Buffon’s son, D’Aubenton, l’abbé Nolin who was in charge of the royal *pépinière*, Vari who was the chief gardener of the Botanic Garden in Rennes, even André Thouin from the *Jardin du Roi* corresponded with Vilmorin. The proximity between gardeners and naturalists highlights

22 *Catalogue des plantes, arbres, arbrisseaux, et arbustes, dont on trouve les graines, des bulbes et du plant chez le sieur Vilmorin-Andrieux. Nouvelle édition augmentée* (Paris, Chez ledit sieur Vilmorin-Andrieux: 1783).

23 Ibidem, avis non paginé: ‘Nous avons, comme dans les précédentes, joint à chaque Espèce & Variété, en moins de mots qu’il nous a été possible, le caractère qui la distingue, la saison de ses productions, le tems & les attentions convenables à sa culture, & sa phrase latine en faveur des Etrangers à qui notre nomenclature n’est pas familière.’

24 “Tems propre à semer la plupart des Graines mentionnées dans ce Catalogue” ibidem 1-20.

25 Easterby-Smith s., “Maillon faible ou maillon fort? Le rôle du commerce des plantes dans le développement d’une science botanique (Paris, 1760-1789)”, unpublished paper, 2009.

how porous these communities were: natural objects and artefacts circulated widely between them.

The importance of a natural history of Paris in the eighteenth century has already been revealed through the analysis of the work of the Geoffroy family.²⁶ Matthieu François Geoffroy was a considerable apothecary, his son Étienne François was born at Paris in 1673, took his bachelor of Physics in 1702 and doctorate in 1704 on his return to Paris after travelling to England, Holland and Italy. In 1709, the King gave him the Chair of Professor of *Physique* at the Collège Royal.²⁷ His son Étienne Louis became a pharmacist and an entomologist. They were all three at the crossroads between the Faculty of Pharmacy or Medicine, their corporation of apothecaries, and academies. This family does bear witness to the complexity of the world of *amateurs* naturalists in Paris, whose role became increasingly important, as the art historian Charlotte Guichard has demonstrated in her work on *amateur* art.²⁸ Not only did they accumulate and collect vast amounts of objects, plants, fossils, shells, curiosities alongside paintings and antiquities: they also showcased specific orderly configurations of nature by means of the display of their cabinet of curiosities.²⁹ When their collections were sold, domestic catalogues or post-mortem inventories were printed by merchants: these catalogues acquired the status of epistemic genre.³⁰ In 1753, Étienne-Louis Geoffroy had to sell the cabinet of his uncle Claude-Joseph, former member of the Academy of Sciences in Paris. With the help of two librarians, H.L. Guerin and L.Fr. Delatour, he published the printed catalogue.³¹ Indeed, Etienne-Louis mentioned that his uncle

26 Van Damme S., *Paris, capitale philosophique. De la Fronde à la Révolution* (Paris: 2005), chapter II.

27 Geoffroy Étienne-François, *A Treatise of the Fossil, Vegetable, and Animal Substances that are made Use in Physick containing the History and Description of them*, transl. G. Douglas (London, [no printer's name] for W. Innys, R. Manby, T. Woodward, C. Davis: 1736), preface.

28 Guichard C., "Taste Communities. The Rise of the Amateur in Eighteenth-Century Paris", *Eighteenth-Century Studies* 45, 4 (July 2012) 519-547. Guichard C., *Les Amateurs d'art à Paris au XVIII^e siècle* (Paris: 2008). Daston L. (ed.), *The Display of Nature in Eighteenth-Century Europe* (Berlin: 2002).

29 Spary E.C., "Codes of Passion: Natural History Specimens as a Polite Language in Late Eighteenth-Century France", in Reill P.H. – Schlumbohm J., *Wissenschaft als kulturelle Praxis, 1750-1900* (Göttingen: 1999) 105-135.

30 Dietz B., "Collections Curieuses: The Aesthetics of Curiosity and Elite Lifestyle in Eighteenth-Century Paris", *Eighteenth-Century Life* 29, 3 (2005) 44-75. On Parisian collections, see also Daugeron B., *Collections naturalistes entre science et empires. 1763-1804* (Paris: 2009); Lacour P.-Y., *La République des naturalistes*. PhD, European University Institute, 2010.

31 Geoffroy Étienne-François, *Catalogue raisonné des minéraux, coquilles, et autres curiosités dans le Cabinet de feu M. [Claude-Joseph] Geoffroy de l'Académie Royale des Sciences*

conceived of his cabinet as a book ('ouvrage'). The metaphor is common in the language of connoisseurship. This catalogue had its specific audience: the Parisian *amateurs* of natural history who already knew perfectly this cabinet thanks to the ritual of visits.³² The sale catalogue is therefore an in-between genre fulfilling commercial purposes (all the items are numbered for auction) yet also akin to the learned catalogue with its notes and commentaries.³³ It made the description and explanation of the collection possible. The editor appeals to the *amateur* of natural history several times in order to justify his editorial choices, and contrasts the *curieux* who knows systematic classifications with ordinary buyers:

The Curious buyers have little regard for this (i.e: the order implemented by the defunct owner) order and order plants according to ideas of their own making – indeed we make no claim here to provide a methodical order, a system of Natural History. Finally, we believe we must warn that we were extremely sparse with regard to notes and reasonings. We have explained only what we deemed absolutely necessary; we have put forward nothing but what was certain, in an attempt to avoid the shortcomings of some works belonging to the same genre as this one: many tales were included in these, which might have impressed a few, but which do not commend the pieces one tries to auction in the eyes of true connoisseurs. For the rest of it we have limited ourselves to a simple list, and leave it to the Curious buyers to ponder over and praise items which might not deserve it.³⁴

[par son neveu Étienne-Louis Geoffroy] (Paris, Hippolyte-Louis Guérinet Louis-François Delatour: 1753).

32 Geoffroy, *Catalogue raisonné des minéraux* fol. aij.

33 On commercial issue, Geoffroy, *Catalogue raisonné des minéraux* v.

34 Geoffroy, *Catalogue raisonné des minéraux* vj-vij: 'les Curieux qui achètent, s'embarrassent peu de cet ordre, ils rangent suivant leurs idées les pièces qu'ils ont acquises, & nous ne prétendons point donner ici un ordre méthodique, un système d'Histoire naturelle. Enfin nous croyons devoir avertir que nous avons été extrêmement réservés pour les notes & les raisonnemens. Nous avons expliqué que ce que nous avons cru absolument nécessaire; nous n'avons rien avancé que de sûr, voulant éviter le défaut de quelques ouvrages du genre de celui-ci dans lesquels on a débité plusieurs fables, qui peuvent bien en imposer à quelques personnes, mais qui ne rendent pas les pièces que l'on veut priser plus recommandables aux yeux des véritables connoisseurs. Pour tout le reste nous nous sommes contentés d'une simple annone, laissant les Curieux faire eux-mêmes leurs réflexions, et l'éloge des articles qui ne peuvent en mériter.'

3 Parisian Flora: Elaborating Systematic Botanical Topographies

The period ranging from the late seventeenth century to the 1840s saw a proliferation of studies of nature in cities. Inventories of Parisian flora for example were consistently present from the late-seventeenth century onwards. No fewer than thirty manuscripts have been preserved on the flora of Paris and its surrounding area. These documents provide systematic inventories of the plant varieties to be found locally. Describing metropolitan nature followed the genre of botanical topography, which organised the list of plants according to their site. The *topos*, the *locus* was key in order to understand a natural topography and to produce a concrete order based on visual observations and walks.³⁵ The production of Parisian flora is therefore linked to the practice of gathering a *herbarium* and to the writing of lists.³⁶

From one inventory to the next we can trace changes in the natural life of Paris and its surrounding area. Bound manuscript books in a format small enough to be carried on walks provided alphabetical lists of plants to facilitate identification. Towards the end of the *Ancien Régime*, the Minim and *amateur* botanist Vanderesse explains the principles underpinning his Parisian botanical classification: he has compared the different models available to him:

Sir, if your occupations permit it, I should like to submit to your understanding a *Botanicon parisiense*, the fruit of various botanical excursions I have made in the area around Paris; I also used the observations of several authors who have written on the subject; here is how I have ordered it: 1. I write down all the plants according to the months in which they flower and I have ordered them in alphabetical order. 2. I give the generic name according to Mrs Tournefort, Linnaeus and Adanson, and I note in which class or family each has placed them, and for greater ease at the end of the Catalogue I have placed abridged tables of these different systems, I plan to add a table of the method which, with your uncle, you gave to the royal garden; 3. to a (learned) phrase excerpted from C. Baudin and Tournefort (about a plant), I add its common name from M. de Linnaeus; 4. the place where the plants are most commonly found. 5. I use the signs

35 'Renaissance naturalists strove to create a kind of vicarious experience in their writings, which thus not only condensed but also recapitulated their own experience of nature', in Ogilvie, *Science of Describing* 141. For the Enlightenment and the Linnaean tradition, see Douin J.-M., *L'Herbier des philosophes* (Paris: 2008) 170.

36 Ogilvie, *Science of Describing* 165-174. On the influence of seventeenth-century novels, Trivisani-Moreau I., *Dans l'empire de Flore. La représentation romanesque de la nature de 1660 à 1680* (Tubingen: 2001).

of Carl Linnaeus to indicate whether the plant is common or not. In addition, I intend to indicate the potency of each and what it may be used for in the arts – so goes the intended progress of my little book, which I undertook to suit my taste for botany, which I always had – a taste I took from the lessons of your late uncle and those since given to me in Rouen by Mr Dangeville. I do not wish to see it printed in order to pretend to be an author, but simply in order to be useful, if you deem it worthy in any measure once you have seen it.³⁷

He noted the importance of order and of classification in the transition from an empirical to a more systematic conception of botany. He himself adopted a classification according to calendar months.³⁸

Devising orders was not the only problem faced by Parisian botanists. The natural space identified in Paris was a network of places as well as a territory. A second organizing principle, which focuses on repeated occurrences and is combined with alphabetical classification, informs us about the geography of the work of collecting. This principle facilitates inventories and quantification, as suggested by the use in a title of the verb 'pulluler' – to proliferate – and the terminology of counting featuring in the 1704 manuscript *Dénombrement des plantes qui naissent aux environs de Paris* by Sébastien Vaillant (1669-1722),

37 Bibliothèque Centrale du Muséum National d'Histoire Naturelle (thereafter BCMNH), ms.1092: Catalogue des plantes des environs de Paris, par saisons, par Vanderesse, religieux minime (1776), Letter from Vanderesse, 13 November 1776, to Brie Comte Robert: 'Si vos occupations vous le permettoient, je voudrois soumettre à vos lumières un Botanicon parisiense, qui est le fruit de différentes herborisations que j'ay fait dans les environs de Paris, je me suis servis aussi des observations de plusieurs auteurs qui ont écrit sur le sujet; voicy la manière dont je l'ay distribué: 1. j'ay écrit toutes les plantes selon les mois de leur floraison et j'ay suivi l'ordre alphabétique pour les arranger. 2. je donne le nom générique selon mr Tournefort Linneus et Addanson, et je marque dans quelle classe ou quelle famille chacun d'eux les placé, et pour plus de facilité, j'ay mis à la fin du Catalogue des tables abrégées de ces différents systèmes, je compte y en ajouter une de la methode que conjointement avec votre oncle vous avés donné au jardin royal; 3. à une phrase sort de C. Baudin ou de Tournefort, je joins le nom trivial de M. de Linneus; 4. le lieu ou les plantes se trouve le plus communément. 5. je me sers des signes de Carl Linnée pour marquer si elle est triviale ou non. Mon dessein sera d'ajouter la vertu de chacune et ce à quoi elle peut servir dans les arts, voilà approchant la marche du petit ouvrage que j'ay entrepris par de gout seul, que j'ay toujours eu pour la botanique; gout que j'avois puisé dans les leçons de feu mr. votre oncle et dans celles que m'a donné depuis à Rouen Mr Dangeville. Ce n'est pas dans le dessein de passer pour un auteur que je voudrois le faire imprimer, mais simplement me rendre util, si vous jugez lorsque vous l'aurez vu qu'il puisse être bon à quelque chose.'

38 Ibidem, fol. 1. The second part of the box comprises the bound collection addressed to M. Maury, his botanizing student from Paris.

and by the 1771 'plant statistics' of Antoine Nicolas Duchesne.³⁹ Two types of spatial representation were at work: a network of places shaping the space of Paris, and a natural territory. In the late-seventeenth century, Joseph Pitton de Tournefort gave precise indications of the places he visited for his botanical observations of different flora: 'Beyond Porte de la Conference on the Cours de la Reine side, towards Les Bons-Hommes and along the river' (fol. 1); 'in the plain of Grenelle and Montrouge' (fol. 4); 'in the Bois de Boulogne' (fol. 5); 'on the Mont Valérien' (fol. 19); 'around Suresne, along the Seine, Saint-Cloud and Seve' (fol. 23); 'in the meadows around the Antoni, Berni, Cachain, Arcueil and Gentilli (*sic*) bridges' (fol. 89); 'in the ditches of the Arsenal and Bastille' (fol. 205).⁴⁰ By comparing the various manuscripts we can follow the unfolding of a process of surveying and mapping the area in and around Paris. In the printed version Tournefort includes a table in three parts showing botanical observations, and topics as well as the names of plants, and indicates potential medicinal uses of the inventory.⁴¹ The fact that the book is dedicated to Guy-Crescent Fagon, first physician to the king, and approved by Pierre Michon Bourdelot, doctor to the Duchesse de Bourgogne, strongly supports this intended use.⁴² Sébastien Vaillant confines his inventory to the space covered by the map of the "Prévôté" and "Élection" de Paris.⁴³ As a member of the Royal Academy of Sciences and Demonstrator at the Royal Garden, where he had been appointed by Fagon, Vaillant took over Tournefort's work, spending 26 years preparing his book for its final publication in 1722, with 300 drawings.⁴⁴

39 BCMNHN, ms. 1093: "Dénombrement des plantes qui naissent aux environs de Paris, extrait du livre de Tournefort avec des additions", by Sébastien Vaillant (1704). Vaillant Sébastien, *Botanicon parisiense, operis majoris prodituri prodromus* (Leiden, Pieter van der Aa: 1723). The book was translated and published in 1727 and 1743. BCMNHN, ms. 1297: "Statistique végétale des environs de Paris", by Duchesne (1771).

40 BCMNHN, ms. 77: "Herborisations aux environs de Paris", by Joseph Pitton de Tournefort (1656-1708).

41 Pitton de Tournefort Joseph, *Histoire des plantes qui naissent aux environs de Paris, avec leur usage dans la médecine* (Paris, Imprimerie royale: 1698).

42 On the printing history of the book of plants, see Lemaire A., "Le Livre de plantes en France au dix-septième siècle (1593-1708)", thesis for the diploma of Archivist and Paleographer, École des Chartes, 1995.

43 Vaillant Sébastien, *Botanicon Parisiense, ou Dénombrement par ordre alphabétique des plantes qui se trouvent aux environs de Paris compris dans la carte de la prévôté et de l'élection de la dite ville par le sieur Danet Gendre année 1723, avec plusieurs descriptions des plantes, leurs synonymes, le tems de fleurir et de grainer, et une critique des auteurs de botanique, ... enrichi de plus de 300 figures, dessinées par le sieur Claude Aubriet* (Leiden – Amsterdam, Jean and Herman Verbeek – Balthasar Lakeman: 1727).

44 BCMNHN, ms. 1093: *Dénombrement des plantes qui naissent aux environs de Paris, extrait du livre de Tournefort avec des additions par Sébastien Vaillant* (1704).

This book is a magisterial folio summary, dedicated to the Abbé Bignon, enhanced with a map of the Archdiocese of Paris and 33 engraved plates. The involvement of an international network of British, French, Dutch and German scientists reflects Vaillant's rigorous approach, confirmed by the inclusion of references, an index and tables. The book also includes a list of subscribers consisting of botanists from all over Europe. It is a monumental publication for the botany of Paris, as indicated by the many translations and annotated or amended manuscripts produced in the eighteenth century.⁴⁵ Vaillant's work was in turn expanded by Bernard de Jussieu,⁴⁶ either in the margins of the 1743 edition of his printed book, or in later manuscript additions: 'to this copy, for my own use on botanical excursions, I have added the manuscript catalogue of these same plants arranged in classes, families and genera following the established order [?] with the abridged standardization of Linnaeus.'⁴⁷ So the usefulness of this composite collection of printed and manuscript material, bound in portable format, is clearly confirmed. In the context of the history of the Paris flora, the practice of adding handwritten annotations to printed copies recurs from the early eighteenth to the mid-nineteenth century, allowing us to speak of an intellectual genealogy.

4 Historicizing Nature in Paris at the Borders of the Metropolis

During the eighteenth century Paris sometimes appeared as a privileged site for the observation of nature and for writing natural history. To what extent did naturalists move from catalogue and inventory, to history? The work of Étienne-Louis Geoffroy shows in this respect the redeployment of scientific activity towards proximity. In 1762, he began to publish his work on natural history devoted to Paris and its surrounding area alongside his *Histoire abrégée des insectes* (*An Abridged History of Insects*), followed in 1767 by his *Traité sommaire des coquilles, tant fluviales que terrestres* (*A Short Treatise on River- and Land-dwelling Molluscs*).⁴⁸ The first treatise contrasts with the second one. It is a large in quarto in two volumes instead of a small and portative in octavo for the second. The *Abridged History of Insects* is preceded by 31 pages of

45 Bibliothèque de l'Institut de France (Paris), Ms.796-797: *Flore des environs de Paris par Sébastien Vaillant, professeur au jardin des Plantes* (XVII^e siècle), 2 vols.

46 BCMNH, ms.1205: *Botanicon Parisienne de Sébastien Vaillant, avec notes et additions manuscrites d'A.-L. de Jussieu* (1743).

47 Ibidem fol. 1.

48 Geoffroy E., *Traité sommaire des coquilles, tant fluviales que terrestres, qui se trouvent aux environs de Paris* (Paris, Jean-Baptiste-Guillaume. Musier fils: 1767).

discours préliminaire which outline the historiography of natural history of insects and the methods followed in the treatise. If botany is deemed a legitimate field of natural knowledge, Geoffroy argued that insects did not prompt the naturalists' interests except for Moderns like Redi, Swammerdam, Malpighi, Vallisneri or Réaumur. In Geoffroy's view, this recent genealogy of authors sheds light on the common lack of method in the natural-historical description of insects.⁴⁹ Geoffroy championed systematic classification in the wake of botanists like Linnaeus. Without any method, the zoologist is condemned to inaccuracy and risks being unable to identify the insect:

I know that some scholars nowadays do not agree with what I say here. Enemies of systems and methodical orders, they seem to let sciences fall back into the kind of confusion they worked so hard to get out of, and what seems even more surprising is that in an enlightened century there are followers of such paradoxes.⁵⁰

The polemical tone transforms the *discours préliminaire* into a defense of systematic classification and of Linnaeus's method.⁵¹ Each entry describes the form, size and colour of the insect. The catalogue of insect was followed by illustrations despite Geoffroy's awareness of the reluctance of zoologists to use picture.⁵² Indeed the increasing attention to morphology in this book gave prominence to visual components.⁵³

However, in the natural history of Paris, the description of insects or plants does not ground the 'reproduction of an experience' to use Brian Ogilvie's terms. Geoffroy's text, for instance, never mentions a geographical location. Historicizing the insect does not mean maintaining the biotopography used in

49 Geoffroy, *Traité sommaire des coquilles* vij: 'Ces commencemens de méthode sont trop superficiels et trop peu systématiques pour être mis en usage, et on a beaucoup de peine à distinguer dans ce grand ouvrage de M. de Reaumur, l'animal dont il traite, faute de caractères suffisans et d'une bonne description'. (These initial sketches of method are too superficial and unsystematic to be put to use, and one struggles to distinguish the animal that M. de Reaumur deals with in his great book, for want of sufficient characters and of a good description).

50 'Je sais que quelque savans de nos jours ne conviendront pas de ce que j'avance ici. Ennemis des systèmes et des ordres méthodiques, ils semblent vouloir faire retomber les sciences dans cette espèce de confusion dont elles ont eu tant de peine à sortir, et ce qui paroît encore plus étonnant, c'est que dans un siècle aussi éclairé, de pareils paradoxes trouvent des sectateurs.' Geoffroy, *Traité sommaire des coquilles* x.

51 Geoffroy, *Traité sommaire des coquilles* xij.

52 Geoffroy, *Traité sommaire des coquilles* xix.

53 Ogilvie, *Science of Describing* 203.

the flora or fauna. While no allusion is made to the conditions of observation or collection, the geographical area covered is defined as the space lying “five or six miles from Paris, which can be found in the course of various walks that may be taken around that city”: the text refers to leisure activities and walks well-known to tour-guide readers and Parisians; it also acknowledges the contribution of peasants and of the local naturalist “M. du Plessis”:⁵⁴

Moreover, it would have been impossible for me to finish this history, no matter how short it is, without the assistance I was granted from all sides. As I was unable to collect insects for many years, I was sent most of these by young people who attend botanizing walks. Bernard de Jussieu, this oracle in Natural History that we cannot consult enough, and who relishes the opportunity to share his vast knowledge, has deigned to send me several observations, and to take a look at this work. Finally I owe much to a Gentleman of Champagne, M. du Plessis who, having devoted his time exclusively to Natural History in recent years, has been kind enough to help me with the bulk of this work. I am indebted to him for an infinite number of observations, all of them curious ones which denote a man with a trained eye for detail – among the insects that I describe here, many can only be seen in his rich and copious collection. It is thanks to these various helps that I have been able to produce, in my spare time, this natural history of insects that can be found within two to three miles around Paris, and that may be encountered in different walks that we are doing around this great city.⁵⁵

54 Geoffroy, *Catalogue raisonné des minéraux* 21.

55 ‘Au reste, il m’auroit été impossible de finir cette Histoire, toute abrégée qu’elle est, sans les secours qui m’ont été donnés de tous côtés. Hors d’état de pouvoir recueillir les insectes depuis nombre d’années, j’en ai reçu de la plupart des jeunes gens qui suivent les herborisations. M. Bernard de Jussieu, cet oracle en fait d’Histoire naturelle, que l’on ne peut trop consulter, et qui se fait un plaisir de faire part de ses vastes connoissances, a daigné me communiquer plusieurs observations, et jeter un coup d’œil sur cet Essai. Enfin je dois infiniment à un Gentilhomme de Champagne, M. du Plessis, qui s’appliquant uniquement depuis quelques années à l’Histoire naturelle, a bien voulu m’aider dans la grande partie de ce travail. Je lui suis redevable d’un nombre infini d’observations, toutes curieuses, et faites par une personne accoutumée à bien voir: et parmi les insectes dont je parle, il y en a beaucoup qui ne se voyent que dans la riche et nombreuse collection qu’il possède. C’est avec ces différens secours que je suis parvenu, dans mes heures de loisir, à donner cette Histoire des insectes qui se trouvent à deux ou trois lieues aux environs de Paris, et que l’on peut rencontrer dans les différentes promenades que l’on fait autour de cette grande Ville.’ Geoffroy, *Histoire abrégée des insectes qui se trouvent aux environs de Paris, dans laquelle ces Animaux sont rangés suivant un ordre méthodique* (Paris, Durand: 1762) vol. 1, p. xix-xxj:

What was the significance of the intensification of this shift of scientific activity at the edges of the city? In Paris, the desire to understand the natural world involved walking through it, in order to make direct contact and create inventories. Far from disappearing with urbanization, walking through Paris was an attempt to re-naturalize the city by focusing on its boundaries. This fascination with the 'surrounding area', the edges and 'green belts', that is, contact zones between the 'natural' and the 'urban', involved a vast range of activities and people during the eighteenth century. In a sense, metropolitan scientists were constructing an outside for themselves by reinforcing these boundaries. Their interest in metropolitan nature was not only shaped by the learned heritage – it was also a response to the transformation of the city, from the classical city marked by order and civility and mapped by topography, to the metropolis characterized by cosmopolitanism and mobility reflected in the political economy of nature which considers said nature as an economic resource and a commodity.⁵⁶ Our investigation of the poetics of Parisian natural history has highlighted importance of specific practices in the capital city: list-making was replaced by descriptions and observations made in the field; the growing attempt to quantify the natural territory of the metropolis ended up emphasizing its natural boundaries? At the eve of the French Revolution, the naturalists' walks became more disciplined and their collections of objects and artefacts were recorded systematically.

Growing interest in the natural dimension of the new metropolis reflects the uses and historical representations of nature and urban development. The search for the essence of a metropolis demanded the historical study of its foundation at a time when concerns about the natural risks associated with urban expansion were emerging. More profoundly, a detour through the natural aspects of the city's origins contributed to the debate about these by relocating the question of the land on which the metropolis stood as a matter of both science and territory, giving rise to an archaeology of nature. It bound scientific and political agendas together by using scientific parameters (size, surface area, physical coherence) to legitimize the city. Lastly it reconfigured the juridical link between belonging, land and property. It gave the sciences of urban nature the status of urban knowledge. Scientists were not content to describe; they ordered nature, establishing inventories and classifications. They produced a natural setting for the city that could compete with historical

56 Koerner L., "Daedalus Hyperboreus: Baltic Natural History and Mineralogy in the Enlightenment," in Clark W. – Golinski J. – Schaffer S. (eds.), *The Sciences in Enlightenment Europe* (Chicago: 1999) 389-422; on the political economy of nature, see also Koerner L., *Linnaeus. Nature and Nation* (Cambridge, Ma: 1999).

and cultural monuments and historicized environmental categories while also producing new ones.⁵⁷

Selective Bibliography

- Biagoli M. – Galison P. (eds.), *Scientific Authorship. Credit and Intellectual Property in Science* (London: 2003).
- Brockliss L. – Jones C., *The Medical World of Early Modern France* (Oxford: 1997).
- Cooper A., *Inventing the Indigenous: Local Knowledge and Natural History in Early Modern Europe* (Cambridge: 2007).
- Cronon W., *Nature's Metropolis: Chicago and the Great West* (Chicago: 1992).
- Daston L. – Pomata G., "The Faces of Nature: Visibility and Authority", in Daston L. – Pomata G. (eds.), *The Faces of Nature in Enlightenment Europe* (Berlin: 2003) 1-16.
- Daugeron B., *Collections naturalistes entre science et empires. 1763-1804* (Paris: 2009).
- Douin J-M., *L'Herbier des philosophes* (Paris: 2008).
- Easterby-Smith S., *Cultivating Commerce. Cultures of Botany in Britain and France, 1760-1815* (Cambridge: 2018).
- Guichard C., "Taste Communities. The Rise of the Amateur in Eighteenth-Century Paris", *Eighteenth-Century Studies* 45, 4 (July 2012) 519-547.
- Guichard C., *Les Amateurs d'art à Paris au XVIII^e siècle* (Paris: 2008).
- Ingold A., "Écrire la nature. De l'histoire sociale à la question environnementale?", *Annales. Histoire, Sciences sociales* 1 (January-March 2011) 11-32.
- Ingold A., "To Historicize or Naturalize Nature: Hydraulic Communities and Administrative States in Nineteenth-Century Europe", *French Historical Studies* 32, 3 (2009) 385-417.
- Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996).
- Quenet G., *Versailles: une histoire naturelle* (Paris: 2014).
- Rawson M., *Eden on the Charles: The Making of Boston* (Cambridge, Mass: 2010).
- Spary E.C., "The Nature of Enlightenment", in Clark W. – Golinski J. – Schäffer S. (eds.), *The Sciences in Enlightenment Europe* (Chicago – London: 1999) 272-306.

57 On the historicization of nature, see Ingold A., "To Historicize or Naturalize Nature: Hydraulic Communities and Administrative States in Nineteenth-Century Europe", *French Historical Studies* 32, 3 (2009) 385-417, and "Écrire la nature. De l'histoire sociale à la question environnementale?", *Annales. Histoire, Sciences sociales* 1 (January-March 2011) 11-32, specifically 21. See on archaeology of nature, Van Damme S., *Métropoles de papier. Naissance de l'archéologie urbaine à Paris et à Londres* (Paris: 2012) chapter 1.

- Spary E.C., "Codes of Passion: Natural History Specimens as a Polite Language in Late Eighteenth-Century France", in Reill P.H. – Schlumbohm J. (eds.), *Wissenschaft als kulturelle Praxis, 1750-1900* (Göttingen: 1999) 105-135.
- Spary E.C., "Scientific Symmetries", *History of Science* 62 (2004) 1-46
- Spary E.C., *Eating the Enlightenment: Food and the Sciences in Paris, 1670-1760* (Chicago: 2012).
- Stalnaker J., *The Unfinished Enlightenment. Description in the Age of the Encyclopedia* (Ithaca: 2010).
- Stradling D., *The Nature of New York: An Environmental History of the Empire State* (Ithaca: 2010).
- Terrall M., *Catching Nature in the Act: Réaumur and the Practice of Natural History in the Eighteenth Century* (Chicago: 2014).
- Van Damme S., *Paris, capitale philosophique. De la Fronde à la Révolution* (Paris: 2005).
- Van Damme S., *Métropoles de papier. Naissance de l'archéologie urbaine à Paris et à Londres* (Paris: 2012).
- Velut, C., *La rose et l'orchidée : les usages sociaux et symboliques des fleurs à Paris au XVIII^e siècle* (Paris: 1993).

Rewriting Bacon's Natural History: Pierre Amboise's Translation of *Sylva Sylvarum*

Dana Jalobeanu

1 Introduction¹

In 1631, Antoine de Sommaville and André Soveron printed in Paris a book entitled *Histoire naturelle de Mre François Bacon, Baron de Verulan, Vicomte de Saint Alban, et Chancelier d'Angleterre*. The book is dedicated to Charles de L'Aubépine, Marquis de Chateauneuf, abbé de Préaux, French ambassador in London between 1629 and 1630. The title-page does not name the translator, but the Privilege du Roy does, specifying that one Pierre Amboise, sieur de la Magdelaine, is allowed to publish a translation of:

A book entitled, The Natural History of Sire Francis Bacon, Canceler of England, with some Letters from the same author; alongside these the life of said sire Bacon, composed by the proponent previously mentioned.²

The *Histoire naturelle de Mre Bacon* is a very odd collection: it consists of a series of prefaces and introductions, a not very inspiring ode to Bacon, six books containing Bacon's natural history proper and a curiously edited version of *New Atlantis* under the title *Nouvel Atlas*. The bulk of the book, namely the "natural history of Francis Bacon" represents a heavily edited and fully reorganized translation of Bacon's last magnum opus, the posthumous *Sylva Sylvarum*, or *A Naturall Historie in Ten Centuries* (1626).³ However, Pierre Amboise never

1 The research for this paper was financed from the grant PN-II-ID-PCE-2011-3-0719, *From natural history to science* held by CELFIS, Faculty of Philosophy, University of Bucharest and from the ERC Starting Grant *Medicine of the Mind in Early Modern England*, jointly held by New Europe College and the Warburg Institute (University of London).

2 'un Livre intitulé, *l'Histoire Naturelle du sieur François Bacon, Chancelier d'Angleterre, avec quelques Lettres du mesme Auteur: ensemble la vie dudit sieur Bacon, composee par ledit exposant*', Amboise Pierre, *Histoire naturelle de Mre Francois Bacon* (Paris, Antoine de Sommaville and André Soubbron: 1631), Privilege du Roy, n.p.

3 Bacon F., *Sylva sylvarum, or, A Naturall Historie in Ten Centuries* (London, J.H. for William Lee: 1626). On the context of this publication see Colclough D., "The Materials for the Building":

refers to his volume as *Sylva Sylvarum*; in fact, he never uses this title.⁴ The "Avertissement" to the reader claims that the volume is a translation of Francis Bacon's posthumous natural history, made 'on the manuscripts of the Author', and intended to correct the 'omissions' and 'unnecessary additions' inserted by Bacon's *amanuensis* who, after his master's death, had simply published indiscriminately all the related manuscripts he could find.⁵ Even by the liberal standards of translation of the mid-seventeenth century, the amount of cutting, rearranging and rewriting of the original text is highly unusual. The result consists of six books (instead of *Sylva's* original ten centuries) – each of these include twelve chapters. Each chapter begins with a short theoretical introduction sprinkled with learned references. Unlike the English version, *Histoire naturelle* is topically organized: it begins with the generation of metals and the (natural) production of gold and continues with sounds, medicines, plants, animals and 'the secret operations of nature'. Since experiments and observations are not numbered, it is difficult to estimate how much of the original *Sylva* gets translated; in fact, the language employed is so very different from Bacon's, that one often struggles to recognize the source text. Indeed, at first glance, it is extremely difficult to detect correspondences between *Sylva Sylvarum* and *Histoire naturelle*.

The *Histoire naturelle de Francois Bacon* has not received a great deal of attention from Bacon scholars.⁶ A cursory reading has one label it as a curiosity,

Reuniting Francis Bacon's *Sylva Sylvarum* and *New Atlantis*", *Intellectual History Review* 20 (2010) 181-200.

- 4 There are quite a number of self-referential passages in *Sylva sylvarum* in which Bacon refers to "this our *Sylva Sylvarum*". They do not feature in the translation, references are always to Bacon's natural history (for example, the translator mentions Bacon's *Historia vitae et mortis*).
- 5 'Outre qu'ayant esté aidé de la pluspart des manuscrits de l'Auteur, i'ay iugé nécessaire d'y adiouter ou diminuer beaucoup de choses qui avoient esté obmises ou augmentées par l'Aumosnier de Monsieur Bacon, qui apres la mort de son Maistre fit imprimer confusement tous les papiers qu'il trouva dans son cabinet.' Amboise, "Advertissement au Lecteur", *Histoire naturelle de Monsieur Francois Bacon* fols. a6b-7a.
- 6 So far, there are only two comparative treatments of *Sylva Sylvarum* and *Histoire naturelle*; Michelle Le Doeuff has offered a tentative table of concordances between Century I and Livre I; and Claudio Buccolini has given a comparative investigation of Century II and the book on sounds (his comparison also takes into account Mersenne's more careful translation of Century II). See Le Doeuff M., "Bacon chez les grands au siècle de Louis XIII", in M. Fattori (ed.), *Francis Bacon: terminologia e fortuna nell XVII secolo* (Rome: 1984) 155-178; Buccolini C., "Mersenne Translator of Bacon?", *Journal of Early Modern Studies* (2013) 33-59. In a previous article I have given a tentative contextual reconstruction of Amboise's translation, discussed in the more general context of the French reception of Francis Bacon's natural histories in seventeenth century. See Jalobeanu D., "The French Reception of Francis Bacon's Natural History in mid Seventeenth-Century France", in Cassan E. (ed.), *Bacon et Descartes: genèses de la modernité philosophique* (Lyons: 2014) 137-159.

one of the many odd episodes in the insufficiently explored history of Bacon's seventeenth-century reception. By contrast, this chapter contends that this peculiar book deserves a thorough contextual investigation.⁷ The comparative study of *Sylva Sylvarum* and *Histoire naturelle* discloses three significant findings. First, Amboise's reorganization of *Sylva Sylvarum* amounts to the careful reading and commonplacing of Bacon's text. Secondly, the translator's choice of subjects, his omissions and his numerous additions to Bacon's text partly reveal his own views on natural history, natural philosophy, medicine and alchemy. Much is yet to be done to identify Amboise himself, his choices and his sources; so far I have reached only the following (provisional) conclusions: that *Histoire naturelle* bears the marks of a specific conception of natural history highlighting the importance of personal experience and personal testimony; and that it also shows an interesting partiality towards alchemy and the natural transmutations of elements. Finally, I show that this peculiar rewriting of Bacon's last great-scale project offers one of the first interpretations and reconstructions of Bacon's much disputed notion of natural history.

2 Baconian Natural History: Collections and Compilations

Amboise's reading of Francis Bacon's natural history is idiosyncratic; but it is just one among many such readings. Baconian natural histories abound in the seventeenth century; and so do various editions, translations, compilations and collections of Bacon's own natural-historical work. The enthusiastic reception of Bacon's natural and experimental history was an important strand of seventeenth century Baconianism.⁸

7 On the significance of Amboise's *Histoire naturelle* in the context of seventeenth-century French Baconianism, see Jalobeanu, D., "The French Reception of Francis Bacon's Natural History in mid Seventeenth-Century France".

8 Of course, not all seventeenth-century Baconians were 'scientific' Baconians, or even interested in Bacon's natural history and experimentalism. However, I am referring here to a particular strand of Baconianism, the Baconianism of natural (and experimental) history. For this particular form of reception of Bacon's works see for example Rees G., "An Unpublished Manuscript by Francis Bacon: *Sylva Sylvarum* Drafts and Other Working Notes", *Annals of Science* 38 (1981) 377-412; Anstey P. and Hunter M., "Robert Boyle's *Designe* about Natural History", *Early Science and Medicine* 13 (2008) 83-126; Dibon P., "Sur la réception de l'oeuvre de F. Bacon en Hollande dans la première moitié du XVII^e siècle", in M. Fattori (ed.), *Terminologia e Fortuna nel XVII secolo* (Rome: 1984) 91-115; Le Doeuff M., "Bacon chez les grands au siècle de Louis XIII"; Gemelli B., *Isaac Beeckman: atomista e lettore critico di Lucrezio* (Florence: 2002); idem, "Isaac Beeckman as a Reader of Francis Bacon's *Sylva Sylvarum*", *Journal of Early Modern Studies* 2 (2013) 61-81.

However, what circulated under the title “Lord Bacon’s natural and experimental history” could vary significantly from one volume to another; even in the case of books such as *Histoire naturelle*, which claims to be a translation. This was at least partly due to the fact that, even for Bacon, natural history seems to have been a capacious and polysemic notion, fulfilling several functions in the larger project of investigating nature.⁹ Although always keeping it as a core element of his project, Bacon used “natural history” to denote either the introductory general survey of the natural world or more advanced experimental study of qualities, virtues and appetites of matter.

Bacon defined the first foundational meaning of natural history – sometimes called the “mother history,” – as a cooperative and cumulative large-scale enterprise requiring ‘an army of workers’,¹⁰ and designed to ‘measure the universe’.¹¹ Bacon saw it as consisting of a large collection of topical natural histories organized according to a large cosmographical order: a natural history of heavens and celestial bodies, another natural history of the atmosphere, meteors and winds, one of the Earth and sea, another of plants, animals and so on. At the end of his *Instauratio magna* (1620) Bacon drafted a list of 130 such topical natural histories to be completed, presumably through the convergent efforts of generations to come.

Bacon also wrote a different kind of natural (and experimental) history, characterized by carefully organized, theoretically informed and, at times, quite specialized experimental inquiries into the nature of qualities (such as dense-rare, hot-cold, heavy-light). In the last years of his life, Bacon managed to write three such specimen natural histories; his *Historia ventorum*, the *Historiae Vitae et Mortis* and the posthumous *Historia densi et rari* are highly theoretical investigations into the appetites, virtues and ‘secret motions’ of matter, directed towards the gradual disentanglement of the ‘subtlety of nature’.¹²

9 See Jalobeanu D., “Francis Bacon’s Natural History and the Senecan Natural Histories of Early Modern Europe”, *Early Science and Medicine* 17 (2012) 197-229; “The Philosophy of Francis Bacon’s Natural History: A Research Program”, *Studii de știință și cultură* 4 (2010) 18-37; *The Art of Experimental Natural History. Francis Bacon in Context* (Bucharest: 2015).

10 Parasceve, OFB XI 450-1

11 Parasceve, OFB XI 458-9.

12 Jalobeanu D., “The Philosophy of Francis Bacon’s Natural History: A Research Program”; “Core Experiments, Natural Histories and the Art of *experientia literata*: the meaning of Baconian Experimentation,” *Societate și Politică* 5 (2011) 88-104; “Learning from Experiment: Classification, Concept Formation and Modeling in Francis Bacon’s Experimental Philosophy”, *Revue Roumaine de Philosophie* 57 (2013) 75-93. On the context of the three specimen histories see Rees G., “Introduction: The Histories in Context”, in Rees G. (ed.), *The Instauratio magna. Part 3, Historia naturalis et experimentalis: Historia*

The third kind of Baconian natural and experimental history exemplified by the posthumous *Sylva Sylvarum* proves even more difficult to characterize. Although clearly a natural and experimental history, *Sylva* is neither topically, nor methodologically organized; it is structured in ten centuries, each century containing a miscellaneous collection of one hundred items labelled 'experiments'. In the posthumous edition published by William Rawley in 1626, experiments are loosely classified into 'solitary experiments', 'experiments in consort' and 'promiscuous experiments'. Various groups of 'experiments in consort' are topically organized: they deal with rarefaction and condensation, putrefaction and vivification, percolation, purgation etc. Some centuries are more organized than others; for example Century II and III constitute an interesting and quite organized inquiry into the nature, production and transmission of sounds. Beyond that, however, *Sylva* is highly miscellaneous and defeats any attempts to find 'a secret order' in it. It reads more like a collection, or a compilation of experiments, recipes and 'technologies'. Finding a place and a function for *Sylva Sylvarum* in Bacon's larger project of the *Great Instauration* has been a recurring challenge for modern scholars.¹³ It was not so for Bacon's contemporaries, who seemed to enjoy equally *Sylva Sylvarum* and Bacon's Latin natural histories, without making too many explicit distinctions between the two. *Sylva* was by far the most popular; it went through more than seventeenth English editions by the end of the seventeenth century.¹⁴ On the Continent, two Latin editions were published in 1648 and 1661, while in France there seemed to have been several parallel projects

ventorum and Historia vitae et mortis (Oxford: 2007) vol. 12, xvii-lxxxiii. For a slightly different interpretation of the relation between theory and experiment in Baconian natural history see also Schwartz D., "Is Bacon's Natural History Theory-Laden?", *Journal of Early Modern Studies* 3, 1 (2014) 63-89.

- 13 So far, three different interpretations have been proposed. 1/ *Sylva Sylvarum* is basically a commonplace book; nothing more than a compilation of Bacon's working notes prepared for the press. According to this interpretation, Bacon might have used this commonplace book to develop his Latin natural histories. 2/ *Sylva* is a rewriting of Bacon's natural and experimental history in a popular, 'sugar-coated' manner designed to draw the neophyte into the discipline of natural *and experimental* history: see Garber D., "Merchants of Light and Mystery Men: Bacon's Last Projects in Natural History", *Journal of Early Modern Studies* 3, 1 (2014) 91-106. 3/ While they acknowledge the pedagogical traits of the *Sylva*, other scholars flatly refuse to see in it a natural history and tend to classify it as Bacon's only work of natural magic. See Weeks S., *Francis Bacon's Science of Magic* (Leeds: 2007); Rusu D.-C., *From Natural History to Natural Magic: Francis Bacon's Sylva Sylvarum* (Nijmegen: 2013).
- 14 Rees, "An Unpublished Manuscript by Francis Bacon: *Sylva Sylvarum* Drafts and Other Working Notes." A comprehensive survey of the reception of Francis Bacon's natural histories in seventeenth century England remains yet to be written. For a survey of the

of translating *Sylva*.¹⁵ In addition to Pierre Amboise's reorganized translation, Claudio Buccolini has discovered a fairly accurate, literal translation of Century II and III by Marin Mersenne.¹⁶ Bacon's Latin natural histories were also quite popular. They went through a large number of editions and were subsequently translated into English and French. The structure and composition of these Latin editions and vernacular translations remain largely unexplored by scholarship. Surprisingly, they have at least one thing in common: they are collections and compilations of Baconian texts. This is clearly the case for the *Sylva* whose life began as a posthumous compilation of Baconian fragments; from 1636 onwards, the English editions of *Sylva* contained a growing collection of Baconiana: lists of desiderata, indices and tables,¹⁷ medical recipes, Rawley's *Life of Bacon*,¹⁸ Rawley's translation of *History of life and death*,¹⁹ *Articles of Inquiry Touching Metals and Minerals*,²⁰ and even an 'Epitomy of his Lordships *Novum Organum*'.²¹ The Latin natural histories suffered a similar fate; they were soon integrated in translation into similar collections of Baconiana. This is the case of the *Natural and Experimental History of Winds* (London: 1653), translated into English by 'R.G. Gent'. This volume contains translations of the *Historia ventorum*, Bacon's prefaces to the other natural and experimental histories and two fragments of the *Novum organum*: one entitled *An Inquiry into the Form of Heat*, and the other *Inquiry into Forms of Motion*.²² A similar collection was published in Leiden, in 1638, under the name *Historia naturalis et experimentalis de ventis*.²³ The volume contains the 1622 *Historia ventorum* with its prefaces, *Historia naturalis et experimentalis de forma calide* (a selection of aphorisms from the second book of *Novum organum*), *De motus sive virtutis activae variis speciebus* (the list of simple motions from the second book of *Novum organum*), and *Ratio inveniendi causas fluxus et refluxus maris*.²⁴

editions see Gibson R.W., *Francis Bacon: A Bibliography of his Works and of Baconiana to the year 1750* (London: 1950); *Supplement* (Oxford: 1959).

15 Few were carried out. See Jalobeanu, "The French Reception of Francis Bacon's Natural History in mid Seventeenth-Century France".

16 Buccolini, "Mersenne Translator of Bacon?" 33-61.

17 Bacon, *Sylva Sylvarum* (London: 1635) contains a table of experiments at the beginning and an alphabetical index at the end, as well as Lord Bacon's "recipe for gout."

18 From 1658.

19 From 1657, in all the subsequent editions.

20 From 1664, in most of the subsequent editions.

21 In 1677 and 1680.

22 A second edition of the same compilation was published in 1671.

23 A second edition in Leiden: 1648, and a third one in Amsterdam: 1662.

24 Another selection of aphorisms from the *Novum organum* book II, the "Crucial Instances".

Bacon's Latin natural histories were translated in French by Jean Baudoin in 1647 (*Histoire de la vie et de la mort*) and 1650 (*Histoire des vents*). The first is largely a faithful translation, but contains numerous added marginalia and references. The translator also supplies the reader with a very interesting and quite non-Baconian table of contents which re-organizes the material under traditional headings, such as in the following sequence:

Long and short life in animals
 Quadrupeds
 Birds
 Fish
 Food
 Long and short life in man²⁵

The other Latin natural history translated by Baudoin, *Histoire des vents*, also bears interesting marks of editorial intervention. For example, the long and comprehensive philosophical preface that Bacon had added to his 1622 edition of *Historia ventorum* is entirely missing. Instead, the translator inserts a short preface explaining the practical use of such a natural history of winds for navigation or weather forecast, among others. The volume closes with a couple of pages of considerations regarding the effects of the winds which are clearly missing from the original. As the marginalia indicates, they seem to be a gloss on various quotes from Pliny's *Historia naturalis*.²⁶

All these examples disclose a certain methodological tolerance not entirely alien to Bacon's own views on the matter. After all, what all Bacon's natural histories had in common – regardless of their structure and register – is the emphasis on the unfinished and provisional character of the natural-historical investigation. Even the more theoretical, more advanced forms of natural and experimental history (such as the Latin natural histories) were programmatically unfinished, and were said to consist of 'materials for the building' of future, more exact, experimental inquiries (leading eventually to natural

25 'La longue et la courte Vie aux animaux / Les Quadrupedes / Les Oiseaux/ Les Poissons / La Nourriture [...] / La longue et la courte Vie en L'Homme'. Bacon Francis., *Histoire de la vie et de la mort* ..., transl. Jean Baudoin (Paris, Guillaume Loyson and Jean-Baptiste Loyson: 1647). These titles are also inserted in the text. Baudoin's translations went through a second edition under the title *Le medecin historial, ou le parfait regime de vivre* (Paris, Veuve de Guillaume Loyson: 1652).

26 Bacon Francis, *Histoire des vents, ou il est traité de leurs Causes, et de leurs Effets* [...] *Fidèlement traduite, par I. Baudoin* (Paris, Cardin Besongne: 1650).

philosophy).²⁷ In all his natural-historical works, Bacon explicitly and repeatedly tells his reader, to test, correct, add to, and persevere in, his own experimental investigations. Some of his seventeenth-century readers did just that.²⁸ What is surprising perhaps is the degree to which the editors and translators of Bacon's natural histories though fit to intervene into the text; not only adding but also selecting and drastically reordering the material. It is against this background that I want to assess Pierre Amboise's *Histoire naturelle*.

3 Commonplacing *Sylva*

Although heavily edited and reorganized, Amboise's *Histoire naturelle* contains a good deal of Bacon's *Sylva Sylvarum*; some chapters follow quite closely the original, others are abridgements of entire sections. Yet others completely reorganize Baconian material and add interpolations. This reorganization is characteristic of the volume as a whole. *Histoire naturelle* begins with the generation of metals and continues with chapters on the four elements. It then moves on to qualities and virtues, sounds, odours, medical theories, plants and animals. Book v is concerned with the secret operations of nature and contains experiments dealing with the operations, appetites and transmission of spirits and 'immaterial virtues.' In an interpolated passage of Book vi (on animals) the translator justifies the book's structure: he claims that although Aristotle and Scaliger have produced sufficiently large histories of animals, his own volume still requires a book on animals otherwise 'the bulk of this natural history would be incomplete'.²⁹

The topical reorganization of *Histoire naturelle* makes the identification of corresponding sections in the source text all the more difficult that Amboise's method is the one of commonplace compilation.³⁰ Such compiling is quite blatant in places. Thus one short chapter can contain materials coming from as

27 OFB XII 12 refers to natural history as being the 'timber and material [*Sylva et Materia*]. Rawley's preface to *Sylva Sylvarum* refers to this and other natural histories as being "materials for the building".

28 See also the discussion of Benedino Gemelli on Isaac Beckman reading of Bacon, in Gemelli, "Isaac Beeckman as a Reader of Francis Bacon's *Sylva Sylvarum*". On Mersenne's reading of Bacon see Buccolini, "Mersenne Translator of Bacon?".

29 'Et n'eust esté que le corps de cette histoire naturelle sembleroit imparfait, si lon n'y faisoit quelque mention des animaux.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 354

30 On commonplacing see Blair A., "Humanist Methods in Natural Philosophy: The Commonplace Book", *Journal of the History of Ideas* 53 (1992) 535-539; idem, *Too Much to Know: Managing Scholarly Information before the Modern Age* (New Haven: 2010).

much as four different centuries of *Sylva Sylvarum*. Take for example chapter 3 of Book I, entitled “That air can serve as food”. This relatively short chapter consists of a short introduction based on experiment 360, Century IV of *Sylva Sylvarum* (“that chameleons live solely with air”), a gloss on experiment 899 from Century IV on the fact that hibernating animals do not lose weight, a relatively accurate translation of experiment 29 in Century I “regarding the condensing of air” in plants (such as onions) and a quite accurate translation of experiment 745 in Century VIII. The translator alters the wording and sometimes even the purpose of the experiments to have them fit the topic of his chapter: each of the experiments selected relates to the title of the chapter; they show, directly and indirectly, that air can ‘nourish’ animals and plants, i.e. that the process of condensation does sometimes more than transforming air into water; it transforms air into the ‘solid body’ of a plant:

As for plants, I can say with greater certainty that they can feed on air, as I have often experimented that onions and other bulbs taken out of the earth and hung in the air carry on growing, and in doing so, these plants become heavier than they were before. From this I boldly conclude that air can thicken and condense to such a degree that it becomes a solid body and by this means, can provide food and mass to other bodies.³¹

In this paragraph, ‘I have often experimented’ stands as an abridgment for an entire list of observations and experiments; here is the source-text in *Sylva*:

Onions, as they hang, will many of them shoot forth; and so will penny royal; and so will an herb called orpin [...]. We see it likewise, more especially, in the greater simper-vive, which will put out branches, two or three years; but it is true, that commonly they wrap the root in a cloth besmeared with oil, and renew it once in half a year. The like is reported by some of the ancients, of the stalks of lilies [...]. We see also, that stumps of trees lying out of the ground, will put forth sprouts for a time.³²

31 ‘Mais pour les plantes, ie puis dire avec plus d’assurance qu’elles peuvent tirer leur aliment de l’air, ayant souvent expérimenté, que des oignons et autres bulbes tirees hors de la terre, et suspenduës en l’air, ne laissent pas de croistre: Et ce qui me semble plus admirable, est que ces plantes en croissant deviennent plus pesantes et lourdes qu’elles n’estoient auparavant. D’où ie conclus hardiment, que l’air se peut épaissir et condenser iusques à tel degré, qu’il deviendra un corps solide, et donnera par ce moyen du pois et de la nourriture aux autres.’ Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 16-17.

32 SS I 29 SEH II 350.

The translation does not only omit the list of observations recorded about the sprouting of plants in the air; it also omits Bacon's experiment which tests whether plants can feed from air:

But it is a noble trial, and of very great consequence, to try whether these things, in the sprouting, do increase weight; which must be tried by weighing them before they be hanged up, and afterwards again when they are sprouted. For if they increase not in weight, then it is no more than this; that what they send forth in the sprout they lose in some other part: but if they gather weight, then it is *magnale naturae*; for it sheweth that air may be made so to be condensed as to be converted into a dense body [...]. It sheweth also that air can nourish: which is another great matter of consequence.³³

In other words, the explanation for the phenomenon of plants sprouting 'in the air' depends on two parameters: the internal humidity of the root and the potential 'condensation' and 'concoction' of the air, used as nourishment. To distinguish the two effects Bacon suggests weighing the plants before and after they sprout; he even mentions that 'the experiment of the semper-vive must be made without oiling the cloth; for else, it may be the plant receiveth nourishment from the oil'.³⁴ Significantly and very characteristically, this is how I 29 ends; Bacon does not specify the actual result of the experiment. On the other hand, it is clear from the context that a positive effect will be observed, once the reader tries for herself (after all, the title of I 29 is *Experiment solitary touching the condensation of air, in such sort as it may put on weight and yield nourishment*). None of this experimental methodology is reflected in the corresponding passages of *Histoire naturelle*. However, the abridged version of the translation records accurately the theoretical explanation and the result.

One should not imagine that, once they are hung, the sprouting of these plants derives from some viscous humidity stored in their roots which would provide them with the vital power necessary to this effect; for, if this was the cause, these plants would maintain their original weight and would not become heavier, since growth in one part would involve loss in another. These raisons can therefore not be accepted as valid, and one

33 SS I 29 SEH II 350-351.

34 SS I 29 SEH II 351.

must necessarily attribute the cause of the plant's added weight to the element of air, since it is the only body that surrounds it.³⁵

Amboise then connects this result with another experiment, which presumably shows the same thing; namely that there are curious increases in weight which cannot be explained without invoking the 'nourishing' properties of the air. In this second case, he carefully translates almost word for word experiment 745 in Century VIII of the *Sylva*.

This example clearly illustrates that Amboise's selection assumes a careful reading and remarkable understanding of Bacon's work; his selection is based on a preliminary survey and commonplacing of the whole work. The traces of commonplacing are visible in almost every books of *Histoire naturelle*. The most fragmented is undoubtedly Book I, which contains examples taken from all ten centuries of the *Sylva*. Examples in Book II (on sounds) are mainly from centuries II and III. Book III, on medicines and medical theories contains recipes and speculations selected from centuries I, III, V, VIII, IX and X of the English version. The fourth book deals with plants and the sixth with animals, but the materials selected in them comes from Centuries IV, V, VI, VII, VIII, IX and X of the English *Sylva*.³⁶

In other words, the translator cuts and pastes fragments from various places in Bacon's *Sylva* that relate to the same topic. For example, chapters 5-7 dealing with the nature of fire are constructed in the following way: Amboise begins with theoretical considerations on the possibility of knowing the nature of fire. Then, he adds an abridged version of the experiments and considerations corresponding to SS I 31 which deals with the properties of the flame follow, and finally the selection of SS IV 399, 366, 373, 371, 372, 375, 374: these experiments and observations investigate the ways in which candles and lamps can burn slower or faster. While Bacon's experimentation aims at a better understanding

35 'Et ne faut point s'imaginer, que le germe de ces plantes ainsi suspendues, procede de quelque humidité gluante, qui s'estant conservée dans les racines, leur donne assez de vigueur pour cet effet; puis que, si c'en estoit la véritable cause, les choses demeureroient en leur premier pois, et ne deviendroient point plus lourdes et pesantes, ce qui s'augmenteroit en l'une des parties de la plante, deperissant en mesme temps en l'autre; de sorte que ces raisons ne pouvans passer pour bonnes, il faut necessairement attribuer la cause de cette nouvelle pesanteur de la plante à l'element de l'air, puis que c'est le seul corps qui l'environne.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 17-18

36 Here are some examples: Chapter I of Book V contains accurate and abridged translations of experiments: 98, 9 and 10; Chapter VIII of the same book contains quite accurate translations of experiments 704 and 833, 884. Chapter 9 of book I (On the moon) contains accurate and abridged translations of experiments 888-890, 75, 891, 892, and an abstract of experiments 893-897 of *Sylva*.

of the nature of flame, its equivalent in Amboise's translation deals mainly with the subject of whether one can build inextinguishable lamps, a prowess mentioned by the Ancients. In this respect, Amboise's text focuses on the *results* of Bacon's experiments on mixing flames (with solid and liquid bodies) as they feature in the *Sylva* (399ff).

Amboise eliminates Bacon's constant reference to flame as a 'body' or a 'fixed body' and replaces it with the language of elements. Even more telling is the way in which he expands Bacon's passing reference to Stoic cosmology. In what is in many ways a careful translation of the English text, Amboise makes a number of additions which modify both the emphasis and the meaning of the text. Thus he highlights the elemental conclusion of the experiment (which, in the English version, is merely alluded to), namely that there is a celestial fire. The French translation focuses on the *difference* between the celestial and the terrestrial fire rather than on their similarities, as is the case in Bacon's text.³⁷ The language of elements recurs throughout Amboise's *Histoire naturelle*.³⁸ For Amboise there are four elements: fire, air, water and earth; they can change into one another: thus air naturally transforms into water under the influence of cold.

The nature of air is so similar to that of water, that these elements are often transformed into one another: and this metamorphosis happens with such ease, that it is often impossible to notice it.³⁹

37 'La troisieme, que la propriété de la flamme n'est pas seulement de faire son effet en haut, mais qu'elle peut agir aussi aux costez et en rond, et se servir du mouvement de circulation, si la force de l'air ne l'en empeschoit par les mesmes raisons que l'ay deduites cy-dessus. Et certes il me semble que lon a condamné assez legerement l'opinion des Stoïques, qui tenoient que la pluspart des corps celestes n'estoient que de vrais feux; puis que lon a fondé leur condamnation sur cette raison seulement qu'il eust esté impossible que ces corps celestes eussent le mouvement de circulation s'ils eussent esté de feu. Mais il faut croire que ces luges n'avoient pas bien observé la nature de cet element; et si nous trouvons icy bas quelques vestiges de ce mouvement circulaire, il est bien facile à iuger que ces flambeaux celestes, qui sont composez d'une mesme matiere, mais beaucoup plus rarefiée que n'est pas nostre flamme, peuvent avoir la mesme fonction en un degré bien plus parfait; veu mesme que nous n'avons en terre, à proprement parler, que la lie des elemens.' Amboise (trans.) *Histoire naturelle de Mre Francois Bacon* 30-32. Emphasis mine.

38 Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 18-20, 21, 41.

39 'La nature de l'air est si voisine à celle de l'eau, que bien souvent ces deux elemens se changent l'un en l'autre: et cette metamorphose se fait avec tant de facilité, qu'il est la pluspart du temps impossible de la reconnoistre'. Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 20.

Amboise's commonplacing and his substantial interpolations provide us with a tentative sketch of of a seventeenth-century French Baconian natural historian: someone interested in cosmography, natural philosophy, alchemy, and the tradition of the books of secrets.

4 Facts and Texts: The Status of Experiment and Authority in Amboise's Translation

Commonplacing is a complex and theoretically significant activity.⁴⁰ What a particular reader selects from a book is bound to reflect his own takes and opinions. So does what it is left out from a particular selection. Additions and interpolations can also provide useful information.

One of the most interesting features of Amboise's *Histoire naturelle* is the constant suppression of multiple experimental reports, recipes and description of technologies so abundant in *Sylva Sylvarum*. The way in which some of Bacon's strings of experiments are cut and edited reveals Amboise's quite different understanding of the nature and role played by experiments and experimentation in natural philosophy.

Here is one example: chapter IV of Book I on condensation ("Du changement de l'air en eau"). The chapter is made of translations and abridgements of experiments 27, 81, 82, 77, 76 and 80 of the English *Sylva*. In some cases, experiments are heavily edited; in most cases the translator only gives the results of Bacon's observations and experiments. Such are, for example, references to the morning dews and the humidity of cold stones (or walls of buildings) which 'are nothing but the effects of this transformation of the air'; or the explanation of springs as resulting from a process of condensation taking place in the 'veins of the earth'.⁴¹ In some cases, the 'experiment' is rendered more fully. In fact, Amboise gives two extended experimental reports, corresponding to experiments 76 and 77 of the *Sylva*. They are both taken from ancient authors and

40 See Blair, "Humanist Methods in Natural Philosophy: The Commonplace Book"; idem, *Too Much to Know: Managing Scholarly Information before the Modern Age*; idem, "Historia in Zwinger's *Theatrum humanae vitae*", in Pomata G. – Siraisi N.G. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Harvard: 2005) 269-295; Yeo R., "Between Memory and Paperbooks: Baconianism and Natural History in Seventeenth Century England", *History of Science* 14 (2007) 1-47; Mukherjee A., "*Floræ* Paradise: Hugh Platt and the Economy of Early Modern Gardening", *The Seventeenth Century* 25 (2010) 1-26. On Bacon's methods of commonplacing see the introduction to OFB I.

41 Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 21 This corresponds to SS I 27 SEH II 348.

prove that air transforms into water through condensation. The first example comes from Aristotle:⁴²

It is reported by one of the ancients, that in Lydia, near Pergamus, there were certain workmen in time of wars who fled into caves; and the opening of the caves being blocked by the enemies, they starved. But a long time after that the dead bones were found; and some vessels which they had carried with them; and the vessels full of water; and that water thicker, and more similar to ice than common water:⁴³ *which is a notable instance of condensation and induration by burial under earth (in caves) for a long time; and also of the transformation (as it should seem) of the air into water; if any of those vessels were empty. Try therefore a small bladder hung in snow, and the like in nitre, and the like in quicksilver; and if you find the bladders fallen or shrunk, you may be sure the air is condensed by the cold of those bodies; as it would be in a cave under the earth.*⁴⁴

Amboise translates:

In order to strengthen further this opinion regarding the common transformation of air into water, I shall not forget to include here what I have read in an ancient author: that in the province of Lydia, quite near Pergamus, some natives of the land found refuge (against the rages of war) in rather deep caves whose entrances were then blocked by their enemies; so that once they had consumed the goods and sustenance that they had brought with them, they all died of starvation as they could not be rescued. A long time afterwards, those caves were opened and the bones of those miserable men were found alongside the vessels in which they had brought food – those were full of water, and it very thick and

42 Aristotle, *De mirabilibus auscultationibus* in *The Works of Aristotle*, J.A. Smith. – W.D. Ross (eds.) (Oxford: 1909) 834a52. The story in *De mirabilibus* goes as follows: 'In the Lydian mines near Pergamos, which also Croesus had worked, the following incident occurred. When a certain war arose the workmen fled to them; but, as the mouth was built up, they were suffocated; and a long time afterwards, when the mines were cleared out, vessels, which they used to employ for daily uses, such as jars and the like, were found petrified. These, being filled with whatever liquid it might be, had been turned to stone, as well as the bones of the men.'

43 In the corresponding passage in Aristotle, the vessels and the bones were petrified, and there is no corresponding change mentioned as having happened to the water.

44 SS I 77 SEH II 372.

close to ice. It is certain that this water could not result from anything else but the change that is our topic.⁴⁵

I have italicized the differences between the two versions. The story is the same in both cases, and it is taken to establish a fact: that after being sealed in a cold cave for a long time, the empty vessels were found filled with water; and that said water was thicker than normal water. Yet mark the difference between Bacon's cautious interpretation and Amboise's peremptory conclusion. There is no mention in the translation of the trial suggested by Bacon; for Amboise, the reported story is enough to conclude that 'it is certain that that water could have not come from anywhere else than from the transformation under discussion.'⁴⁶

The following example comes from Pliny's *Natural History* and its treatment by Amboise is very similar. Although, again, the translation follows closely the original, namely experiment 1.76 of the *Sylva*, it stops where the Plinian anecdote ends and omits the string of experiments used by Bacon to test the ancient report. Only one experimental trial is left to illustrate the claim that air transforms into water. In the *Sylva*, this experiment reads:

And thus much we have tried, that a quantity of wool tied loose together, being let down into a deep well, and hanging in the middle some three fathoms from the water for a night in the winter time, increased in weight (as I now remember) to a fifth part.⁴⁷

45 'Pour appuyer davantage l'opinion de ce frequent changement d'air en eau, ie ne veux oublier de mettre icy ce que i'ay leu dans un ancien Autheur; qu'en la province de Lydie, assez prez de Pergame, quelques habitans du païs (pour eviter les fureurs de la guerre) se refugierent en des caves assez profondes; dont l'entrée leur ayant esté depuis bouchée par les ennemis, *apres avoir consommé les vivres et provisions qu'ils y avoient portees, ils perirent tous de faim sans pouvoir estre secourus*. Long temps apres ces caves ayans este ouvertes on trouva les os de ces miserables, et ensemble les vases dans lesquels ils avoient porté leurs provisions, qui estoient tous remplis d'eau, mais fort épaisse et fort approchant de la glace. *Or il est certain que cette eau ne pouvoit proceder d'ailleurs, que de ce changement dont nous traittons*.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 22-24

46 Ibidem 24. In the *Sylva* it looks like the ancient 'story' is 'tried' and confirmed by the experiment proposed; the pig bladder buried in snow 'simulates' the conditions in the sealed cave. On Bacon's use of modeling see Jalobeanu, "Learning from Experiment: Classification, Concept Formation and Modeling in Francis Bacon's Experimental Philosophy."

47 SS I 76 SEH II 372.

The same becomes in Amboise:

But without being held by the belief in another ['s opinion], I decided to carry out the experiment myself; I had a reasonably large pack of wool hung in the opening of a well; having left it there during a winter's night, I found the following morning that the weight of the wool had increased by a fifth, and that a similar amount of water could be expressed out of it.⁴⁸

In the *Sylva*, this experiment is followed by another set of experiments designed to prove that, because of its porous character, wool or fleece can be used as a catalyst for the condensation of the air. In Amboise, however, the two classical examples *and* the experiment selected (rewritten as a first-hand observation) suffice to establish the truth of the major claim of the chapter, i.e. that air can turn into water:

All these proofs and experiments have me judge that the transformation of air into water is a rather common operation in nature. Yet it is worth noting that not all bodies can generate this effect: air bounces with too much violence on the solid and hard ones, which make it impossible for vapour to stick to them; by contrast, softer and more porous ones such as sponge, wool and the like receive air more easily, thus allowing it to change its nature.⁴⁹

This and similar edited series of examples show that Amboise shares a much traditional understanding of experiment as *exemplum*, i.e. a fact or report (based on personal experience or trustworthy testimony) illustrating a general proposition or a theoretical claim. Amboise's emphasis on personal experience

48 'Mais sanz m'arrester à la foy d'autrui, i'en ay voulu moy-mesme faire l'experience : et ayant fait suspendre à l'emboucheure d'un puits un assez gros paquet de laine, apres l'avoir laissé en ce lieu pendant une nuit d'Hyver, i'ay trouvé le lendemain matin que le pois de la laine estoit augmenté jusques à la cinquiesme partie, et *qu'en la pressant on pouvoit en tirer de l'eau à semblable proportion.*' Amboise (trans.), *L'Histoire naturelle de Mre Francois Bacon* 25.

49 'Toutes ces preuves et ces experiences me font iuger que le changement de l'air en eau est un ouvrage assez frequent en la nature: Mais il est bon de remarquer, que toutes sortes de corps ne sont pas propres à cet effet: ceux qui sont durs et solides *repercutent l'air avec trop de violence*, et ne permettent pas à cette vapeur de s'attacher à eux: ceux au contraire qui sont plus doux et plus poreux, comme l'éponge, la laine, et autres semblables, reçoivent l'air avec plus de facilité, et lui donnent moyen de changer de nature.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 26.

is quite strong and determines important changes in the experimental reports.⁵⁰ Also characteristic is the translator constant abridgment of Bacon's experimental reports: Amboise presents the experimental result as a constructed 'fact' on which theoretical conclusions are based. Amboise constantly rephrases Bacon's suggested experiments, tentative questions and provisional conclusions in terms of results and of rational and necessary conclusions. He often rewrites what is in the English version a *question* or a suggestion for further experimentation so that it looks more like the *result* of a personal observation. The suppression of experimental reports reflects significant theoretical changes.

Thus Amboise gathers a particular selection of experiments from *Sylva* in such ways as to reach quite different conclusions from Bacon's. In Chapter 9 of Book I about the moon, Amboise collects abridged translations and references to experiments 75, 889, 891, 892, 893-7 alongside an abridged translation of 897. In the source-text, Bacon speaks tentatively of the effects of the moon on sublunary bodies:

Of the power of the celestial bodies, and what more secret influences they have besides the two manifest influences of heat and light, we shall speak when we handle experiments touching the celestial bodies; meanwhile we will give some directions for more certain trials of the virtue and influences of the moon; which is our nearest neighbour.⁵¹

Experiments on the 'secret influences' of the moon in Century IX of *Sylva Syarum* delineate a complex investigation. Four possible influences are investigated, which Bacon claims are 'the most observed': the 'drawing forth of heat, putrefaction, increased moisture and increased motions of spirits'.⁵² However, Bacon agrees that 'there may be other secret effects of the influence of the moon, which are not yet brought to observation'.⁵³ Each of these influences has to be made the subject of an experimental inquiry. This is how the

50 Here are some examples: in Chapter 9 of Book III (On music) Amboise reports on the echo of Charenton in significantly different terms (and presents the story as based on personal experience); Chapter 8 of Book V introduces an experiment made with a Turkish bow, with the following words: 'Je n'ay pas voulu me contenter en cela du recit que lon m'en faisoit; j'ay désiré moy-mesme en faire l'experience.' Amboise (trans.) *Histoire naturelle de Mre Francois Bacon* 320-321. Chapter I of Book III emphasizes the need to talk about medicine in terms of personal experience and provides a medical biography: *Histoire naturelle de Mre Francois Bacon* 134-135.

51 SEH II 635.

52 SEH II 636.

53 SEH II 637. Bacon suggests for example the influence of moon on the weather.

experimenter should proceed to establish whether there is any truth in the claim that the 'moon is magnetical of heat':

For the drawing forth of heat, we have formerly prescribed to take water warm, and to set part of it against the moon-beams, and part of it with a screen between; and to see whether that which standeth exposed to the beams will not cool sooner. But because this is but a small interposition [...] it would be good to try it when the moon shineth, and when the moon shineth not at all; and with water warm in a glass bottle, as well as in a dish; and with cinders; and with iron red-hot, etc.⁵⁴

By contrast, Amboise begins the chapter on the virtues and powers of the moon by claiming that it is the common universal opinion that the moon has a 'strong influence' over terrestrial things: it cools them down, induces putrefaction, increases humidity and excites the motion of the spirits.⁵⁵ Bacon's complex experimental set of trials is reduced to the following:

It is certain that the moon has the specific power to extract heat from bodies; I have experimented that hot water exposed to the beams of the moon cools down more quickly than if it had been under the shade of some trees. For the same reason too, those who sleep exposed to the moon feel so very cold.⁵⁶

Regarding the second claim according to which the moon induces putrefaction, the English version also formulates a set of experimental trials; the experimenter has to place 'flesh or fish', 'capon, or some fowl' in the moon-beams and in the shade (or 'when moon shineth not') for an equal amount of time in order to see when (and where) corruption begins. The same experiment is to

54 SS 890 SEH II 636.

55 All effects are said to have been personally witnessed/discovered: 'Pour moy, j'ay observé qu'elle a quatre effets principaux dessus les corps; sçavoir, l'extraction de la chaleur, l'induction de la putréfaction, l'augmentation d'humidité, et l'excitation du mouvement des esprits.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 50.

56 'il est certain que la Lune a une propriété particuliere, de tirer la chaleur des corps, et j'ay expérimenté que de l'eau chaude exposee aux rayons de la Lune, sera bien plutost refroidie, que si elle estoit à couvert sous l'ombrage de quelques arbres. C'est aussi par la mesme raison, que ceux qui dorment à la Lune ressentent tant de froid.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 50-51.

be repeated with apples and oranges 'with holes made in their top', and with a mixture of Dutch cheese and wine.⁵⁷ By contrast, all this becomes in Amboise:

As for the second effect, I know full well that this celestial body induces putrefaction, and I have tested that flesh exposed to its beams will rot much quicker than anywhere else.⁵⁸

Again, Amboise simply uses the (conjectural) results of his selected passages from Bacon to assert specific celestial influences. In the rest of the chapter the translation simply transforms Bacon's doubts and queries into affirmations. Amboise states that the full moon increases humidity and is the main cause of storms; it also fuels growth (in plants and animals), 'vigor and strength' in organisms and in the 'whole of nature' because it is responsible for the 'agitation of the spirits'.⁵⁹

That Amboise's conception of celestial influences is much more unproblematic than Bacon's is also apparent in Chapters 1 and 2 of book I, concerned with the generation of metals and the fabrication of gold. Non-Baconian additions and interpolations are even more visible in these chapters. In some cases, they plainly contradict Bacon's theory. Chapter one is a short summary of classical arguments in favour of the traditional Aristotelian theory on the generation of metals.⁶⁰ In Amboise's words:

57 For evidence that Bacon did indeed carry out some of these experiments see Rees, "An Unpublished Manuscript by Francis Bacon: *Sylva Sylvarum* Drafts and Other Working Notes". I have discussed Bacon's experimental trials in Jalobeanu, *The Art of Experimental Natural History*.

58 'Pour le second ie sçai bien que cet Astre induit la putrefaction, et i'ay esprouvé que la chair exposee à ses rayons, se corrompt bien plustot qu'ailleurs.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 51

59 The chapter ends with a characteristic interpolation conflating various classical sources: 'T'ay remarqué en outre, que les tonnerres et les orages arrivent ordinairement dans le plein de la Lune, comme si la nature avoit davantage de force pour la production de ces tempestes. Et à ce propos, il me souvient d'avoir leu dedans un ancien Rabin, que la force de Samson, quoy qu'elle fust surnaturelle, se regloit neantmoins au cours de la Lune; en telle sorte, qu'il avoit beaucoup plus de force pendant le plein que pendant le decours; Et il remarque que tous ses grands exploits contre les Philistins ont esté faits dans le plein de la Lune.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 53-54.

60 The view according to which the most important cause of generation (including the generation of metals) is celestial heat can be found in Aristotle, *De generatione animalium* 11. 3. It had many versions in the Renaissance. See for example Vermij R., "Subterranean Fire. Changing Theories of the Earth During the Renaissance", *Early Science and Medicine* 3 (1998) 323-347; Hirai H., *Le Concept de semence dans les théories de la matière à la Renaissance de Marsile Ficin à Pierre Gassendi* (Turnhout: 2005) 130-131, 141-143, 151-155.

Philosophers have us buy as a most certain maxim that metals grow merely from the heat of the sun which pierces through to the entrails of the earth – there it digests and polishes over a long period of time the matter that welcomes it for this work.⁶¹

Chapter one offers standard empirical arguments usually given against this view; the richness in metals and minerals of Nordic countries such as Norway and Sweden seem to contradict the doctrine which makes the Sun the sole cause of the generation of metals.⁶² Similarly, the presence of sulfur and volcanic activity in Iceland seem to indicate other possible sources of heat.⁶³ In rejecting these objections, Amboise formulates a more sophisticated doctrine of metallic generation. He claims that the generation of metals requires a continuous, temperate, solar heat. Roughly speaking, the longer the heating, the more perfect the metal, providing that the heat of the Sun is not 'too strong'. He therefore claims that the long days of the Arctic summer provide ideal conditions for the generation of gold. Chapter two even offers an estimation of the time necessary to generate gold, i.e. 'twice as much' as for the generation of other metals.⁶⁴

Although Bacon also claims that 'a perfect good concoction or digestion or maturation of some metals will produce gold,'⁶⁵ his theory differs in two important aspects from the one summarized above. Firstly, Bacon's generation of

61 'Les philosophes nous font passer pour une maxime asseuree, que la generation des metaux procede seulement de la chaleur du Soleil, qui penetrant par la force de ses rayons iusques aux entrailles de la terre, digere et polit avec la longueur du temps, la matiere qu'il trouve disposee pour cet ouvrage', Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 1-2

62 On the sixteenth-century theories of metal generations and the sources of heat see Vermij, "Subterranean Fire. Changing Theories of the Earth During the Renaissance."

63 'Il est certain que l'Islande est toute plaine de souffres, témoin les flammes du mont Hecla, qui brûle continuellement depuis tant de siecles; et neantmoins, au rapport de tous les Geographes, cette isle est situee sous le 65. degré de latitude, et perpetuellement couverte de neiges. La Suede et la Norvege sont inhabitees pour la plupart, à cause des grandes froidures; et toutesfois ceux qui nous en font la description, asseurent qu'il s'y trouve des mines d'or et d'argent en assez grande quantité.' Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 3-4. The reference to Hecla is probably derived from Rudolph Agricola, *De natura fossilliorum*; it is usually given as a standard argument in favour of those claiming that there must be an alternative source of heat, in the bowels of the Earth. See Vermij, "Subterranean Fire. Changing Theories of the Earth During the Renaissance", 335 ff. References to the wealth of metals in Sweden and Norway might have come from Renaissance cosmographies.

64 Amboise (trans.), *Histoire naturelle de Mre Francois Bacon* 7.

65 SEH II 449.

metals does not take place 'in the depths of the Earth' but rather close to the surface, 'in the crust'.⁶⁶ Secondly, Bacon believed in a more complex 'influence of the heavenly bodies' than one of simple, continuous and temperate heat.⁶⁷ And, most importantly, he ascribed generative power not to heat itself, but to the 'controlled inequalities' of heat,⁶⁸ and to particular (geometrical) configuration of the soil (the alchemical oven) where maturation takes place. This is why, although the *Sylva* contains examples of spontaneous 'growth of metals',⁶⁹ Bacon is rather sceptical of alchemical procedures leading to the making of gold.⁷⁰ In the *Sylva* the 'Experiment solitary touching the making of gold' is also an attack against alchemists:⁷¹

[...] call in likewise many vanities out of astrology, natural magic, superstitious interpretations of Scriptures, auricular traditions, feigned testimonies of ancient authors and the like.

66 The crust of the earth is for Bacon the 'wonderful workshop' of all generation. For a discussion see DPAO OFB VI 231 ff., and DVM OFB VI 337. By contrast, *Histoire naturelle* states that gold is made 'dans l'entrailles de la terre.' See Amboise (trans.), *Histoire naturelle de Monsieur Francois Bacon* 10-11.

67 'In the surface of the Earth and its crust (which does not extend very far into the depths), in this region where the wonderful workshops which produce animals, plants and minerals, display their wares, every tangible being [...] does not stay much unmixed, but, due to the incessant rarefying and subduing influence of the heavenly bodies [*perpetua rarefactione et subactione coelestium*] has portions thinned out and evidently turned into spirit.' DVM OFB VI 337. Bacon had quite a lot to say about celestial influences which did not make it into the published version of the *Sylva*.

68 See for example NO II 50 OFB XI 433: 'But we should above all try to investigate and find out the effects and products of heat drawing near and receding in a *gradual, orderly and regular way* over proper distances and intervals of time. For this *controlled inequality* is truly the daughter of heaven and mother of generation [*Filia Coeli est et Generationis Mater*]. And we should not expect anything great either from heat violent, headlong or wildly fluctuating. Now this is perfectly obvious in vegetable bodies: and there is also great inequality of heat in the wombs of animals [...]. Lastly in the very matrices of the earth this inequality thrives and has its place and especially in those where metals and fossils are produced.'

69 SS 797 *Experiment solitary touching the growth and multiplying of metals* SEH II 598-599 merely quotes examples and refers to ancient sources; the explanation is given in NO II 40, an explanation with no reference to the heat of the Sun: 'For in the more compact kind of bodies the spirit does not find pores and passages to escape by and so it forces the tangible parts to push outwards and go forward before it so that they go out with it, and this is the cause of rust and the like.'

70 See also NO II 50 OFB XI 433: 'one must take even greater notice of the ineptitude of some of the reformed alchemists for believing that they would achieve their ends with the even heat of lamps and the like always burning at a constant rate'.

71 SEH II 448 translated in Amboise (trans.), *Histoire naturelle de Monsieur Francois Bacon* 9.

Amboise's translation omits all these criticisms and constantly edits other, similar critiques of alchemy and alchemists even where the paragraph is otherwise faithfully translated.⁷²

The French translator of the *Sylva* believes in the natural transmutation of the four elements, ascribes generative power to the celestial influences of the Sun and the Moon, claims that the Earth is essentially cold, and that the temperate and continuous heat of the Sun is the efficient cause of all generation, including the generation of metals, and that this process culminates in the generation of gold. Pierre Amboise also claims that one can imitate this natural process of generation and that gold can be obtained from silver and quicksilver, providing that they are heated in a 'moderate' and 'continuous' way, for a sufficient amount of time.⁷³ He suppresses most negative references to alchemy and the alchemists and takes experiments to be mainly examples illustrating doctrines, while the activity of the experimenter is constantly seen as directed towards the exploration of the 'deep secrets' of nature.

5 Conclusion

Amboise's reorganization of *Sylva Sylvarum* was done in a careful manner, using the method of commonplace books. The ensuing selection, based on his extensive reading of *Sylva*, also discloses some of his opinions on a number of natural-historical and natural-philosophical issues. This study has revealed a translator with a fascination for processes of separation, transmutation and the prolongation of life; and with, at least, a 'soft spot' for alchemy and the alchemists. It has also revealed that Pierre Amboise's natural philosophy is centered upon the doctrine of four elements, that it asserts the natural transmutation of elements and the generative power of celestial influences.

As for natural history, the translator seems to have held a view influenced perhaps by contemporary cosmographies: he believed in the virtues of a complete and careful empirical investigation of nature, topically oriented and based on personal experience and testimony. Moreover, his lack of interest for Bacon's more theoretical questions, methodological worries and elaborated

⁷² See Amboise (trans.) *Histoire naturelle de Mre Francois Bacon* 10-12.

⁷³ In this he clearly differs from the English version of the *Sylva* where Bacon claims that one cannot make gold out of quicksilver, 'for quicksilver will not endure the manage of the fire', and he recommends copper and silver as the best candidates; SEH II 450.

technologies go hand in hand with a fascination for ‘secrets’ and practical results that can edify, illustrate and entertain.⁷⁴

6 Abbreviations

SEH	Bacon, Francis, <i>Works</i> , eds. J. Spedding – R.L. Ellis – D.D. Heath, 14 vols (London – Stuttgart-Bad Cannstatt: 1857-1874 and 1961-1963).
OFB IV	Bacon, Francis, <i>Advancement of Learning</i> , ed. M. Kiernan (Oxford: 2000)
OFB VI	Bacon, Francis, <i>Philosophical Studies c.1611-c.1619</i> , eds. G. Rees – M. Edwards (Oxford: 1996).
OFB XI	Bacon, Francis, <i>The “Instauratio Magna” Part II: “Novum Organum” and Associated Texts</i> , eds. G. Rees – M. Wakely (Oxford: 2004).
OFB XII	Bacon, Francis, <i>The “Instauratio Magna” Part III: “Historia Naturalis et Experimentalis”: “Historia Ventorum” and “Historia Vitae et Mortis”</i> , eds. R. Rees – M. Wakely (Oxford: 2007).
OFB XIII	Bacon, Francis, <i>The “Instauratio Magna”: Last Writings</i> , ed. G. Rees (Oxford: 2000).

Bibliography

- Amboise Pierre (trans.), *Histoire naturelle de Mre Francois Bacon* (Paris: Antoine de Sommerville and André Soubbron, 1631).
- Anstey P. – Hunter M., “Robert Boyle’s Designe about Natural History”, *Early Science and Medicine* 13 (2008) 83-126.
- Bacon Francis, *Of the Advancement and Proficiency of Learning, or the Partitions of Sciences IX bookes [...]* trans. Gilbert Wats Watts (Oxford: Leonard Lichfield, for Robert Young and Edward Forrest: 1640).
- Bacon Francis, *Sylva sylvarum, or, A Naturall Historie in Ten Centuries* (London, Printed by J.H. for William Lee: 1626).
- Bacon Francis, *Histoire de la vie et de la mort [...]*, transl. Jean Baudoin (Paris, Guillaume Loyson and Jean-Baptiste Loyson: 1647).
- Bacon Francis, *Histoire des vents, ou il est traitte de leurs causes, et de leurs effets [...]*, transl. Jean Baudoin (Paris, Cardin Besongne: 1650).

74 For the way in which Amboise’s edits and modifies Bacon’s *New Atlantis* to make it sound more like a book of secrets see Le Doeuff, “Bacon chez les grands au siècle de Louis XIII”.

- Blair A., "Historia in Zwinger's *Theatrum humanae vitae*", in Pomata G. – Siraisi N.G. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Harvard: 2005) 269-295.
- Blair A., "Humanist Methods in Natural Philosophy: The Commonplace Book", *Journal of the History of Ideas* 53 (1992) 535-539.
- Blair A., *Too Much to Know: Managing Scholarly Information before the Modern Age* (New Haven: 2010).
- Buccolini C., "Mersenne translator of Bacon?", *Journal of Early Modern Studies* (2013) 33-59.
- Colclough D., "'The Materialls for the Building': Reuniting Francis Bacon's *Sylva Sylvarum* and *New Atlantis*", *Intellectual History Review* 20 (2010) 181-200.
- Dibon P., "Sur la réception de l'oeuvre de F. Bacon en Hollande dans la première moitié du XVII^e siècle", in Fattori M.(ed.), *Francis Bacon: Terminologia e Fortuna nel XVII secolo* (Rome: 1984) 91-115.
- Garber D., "Merchants of Light and Mystery Men: Bacon's last Projects in Natural History", *Journal of Early Modern Studies* 3, 11 (2014) 91-106.
- Gemelli B., *Isaac Beeckman : atomista e lettore critico di Lucrezio* (Firenze: 2002).
- Gemelli B., "Isaac Beeckman as a Reader of Francis Bacon's *Sylva Sylvarum*", *Journal of Early Modern Studies* 2 (2013) 61-81.
- Gibson R.W., *Francis Bacon: A Bibliography of his Works and of Baconiana to the year 1750* (London: 1950).
- Gibson R.W., *Supplement*, (Oxford: 1959).
- Hirai H., *Le Concept de semence dans les théories de la matière à la Renaissance de Marsile Ficin à Pierre Gassendi* (Turnhout: 2005).
- Jalobeanu D., "Core Experiments, Natural Histories and the Art of *experientia literata*: the meaning of Baconian Experimentation", *Societate si Politica* 5 (2011) 88-104.
- Jalobeanu D., "Francis Bacon's Natural History and the Senecan Natural Histories of Early Modern Europe", *Early Science and Medicine* 17 (2012) 197-229.
- Jalobeanu D., "The French Reception of Francis Bacon's Natural History in mid-Seventeenth Century France", in Cassan E. (ed.), *Bacon et Descartes: genèses de la modernité philosophique* (Lyons: 2014) 137-159.
- Jalobeanu D., *The Art of Experimental Natural History. Francis Bacon in Context* (Bucharest: 2015).
- Jalobeanu D., "Learning from Experiment: Classification, Concept Formation and Modeling in Francis Bacon's Experimental Philosophy", *Revue Roumaine de Philosophie* 57 (2013) 75-93.
- Jalobeanu D., "The Philosophy of Francis Bacon's Natural History: A Research Program", *Studii de stiinta si cultura* 4 (2010) 18-37.
- Le Doeuff M., "Bacon chez les grands au siècle de Louis XIII", in Fattori M. (ed.), *Francis Bacon: terminologia e fortuna nell XVII secolo* (Rome: 1984) 155-178.

- Mukherjee A., "Floræ Paradise: Hugh Platt and the Economy of Early Modern Gardening", *The Seventeenth Century* 25 (2010) 1-26.
- Rees G., "Introduction: The Histories in Context", in Rees G. (ed.), *The "Instauratio magna". Part 3, "Historia naturalis et experimentalis": "Historia ventorum" and "Historia vitæ et mortis"* (Oxford: 2007) vol. 12 xvii-lxxxiii.
- Rees G., "An Unpublished Manuscript by Francis Bacon: *Sylva Sylvarum*: Drafts and Other Working Notes", *Annals of Science* 38 (1981) 377-412.
- Rusu D.-C., *From Natural History to Natural Magic: Francis Bacon's Sylva Sylvarum* (Nijmegen: 2013).
- Schwartz D., "Is Bacon's Natural History Theory-Laden?", *Journal of Early Modern Studies* 3, 1 (2014) 63-91.
- Tenison Thomas (ed.), *Baconiana or certaine genuine remains of sir Francis Bacon* (London, Printed by J.D. for Richard Chiswell: 1679).
- Vermij R., "Subterranean Fire. Changing Theories of the Earth During the Renaissance", *Early Science and Medicine* 3 (1998) 323-347.
- Weeks S., *Francis Bacon's Science of Magic* (Leeds: 2007).
- Yeo R., "Between Memory and Paperbooks: Baconianism and Natural History in Seventeenth Century England", *History of Science* 14 (2007) 1-47.

Bacon, Experimental Philosophy and French Enlightenment Natural History

Peter R. Anstey

One of the most important developments in early modern natural philosophy was the emergence of the new experimental philosophy in England in the late 1650s. By the 1660s many British natural philosophers were calling themselves experimental philosophers and the term ‘experimental philosophy’ had begun to appear in the titles of books on natural philosophy. This new experimental philosophy was both a movement and a method within natural philosophy: it had its central tenets, its self-declared advocates, its opponents and even its own rhetoric.¹

A distinctive feature of the British manifestation of the new experimental philosophy in the latter half of the seventeenth century is the manner in which it expressed itself in the writing and practice of natural history. The form of natural history that the early experimental philosophers developed and practised was derived from Francis Bacon. In his final years Bacon had developed a sophisticated theory of natural history that he intended to serve as a replacement for the natural history of his day and as the foundation of natural philosophy. It was this theory that was taken up by the likes of Robert Boyle, Robert Hooke, Robert Plot and John Woodward and became an important framework within which British natural philosophy was practised. Even a cursory perusal of the writings on the theory of natural history and the books of natural history from the 1660s reveals that British natural history was practised and theorized in a decidedly Baconian manner. In short, one cannot understand the nature of either seventeenth-century natural history or natural philosophy in England without taking into account the role of Francis Bacon and the new experimental philosophy that was associated with his name.

This chapter, however, is concerned with the theory and practice of natural history in mid-eighteenth-century France. Its central contention is that our

1 Anstey P.R. – Vanzo A., “The Origins of Early Modern Experimental Philosophy”, *Intellectual History Review* 22, 1 (2012) 1-20; Anstey P.R., “Experimental versus Speculative Natural Philosophy”, in Anstey P.R. – Schuster J.A. (eds.), *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy* (Dordrecht: 2005) 215-42.

understanding of French natural history of the Enlightenment period is significantly enhanced through an examination of the impact on it of both the Baconian approach to natural history and the new experimental philosophy that emerged in Britain in the previous century. Such a claim may seem surprising, for while there is a voluminous secondary literature on Enlightenment natural history, and in particular the theory and writings of Buffon, very few scholars have shown any interest in the influence of Francis Bacon on Enlightenment natural history and even fewer have examined natural history in the light of the new experimental philosophy.

For example, Bacon's name does not appear in Rhoda Rappaport's extended treatment of Buffon's natural history of the Earth, nor in Emma Spary's *Utopia's Garden: French Natural History from Old Regime to Revolution* and it only appears once in passing in Mary Terrall's *Catching Nature in the Act: Réaumur And the Practice of Natural History in the Eighteenth Century*.² Phillip Sloan's "Natural History" in the *Cambridge History of Eighteenth-Century Philosophy*, does mention Bacon's view that natural history is preparative for natural philosophy but nothing is made of the content of the theory.³ Turning to Buffon scholarship, Bacon's view of natural history is not mentioned in Jacques Roger's biography of Buffon.⁴ Moreover, the one scholar who has recently discussed Buffon and Bacon in detail is Thierry Hoquet, but contrary to the position that I adopt in this chapter, Hoquet claims that Buffon's view of natural history was actually opposed to that of Bacon.⁵

The structure of the ensuing discussion is as follows. In section one I give a brief overview of the Baconian theory of natural history. Section two examines the ties between Bacon's theory of natural history and the new experimental philosophy in Britain. Section three discusses the manner in which the Baconian theory manifested itself in the early Académie des Sciences and then discusses the uptake of experimental philosophy in France in the eighteenth century. Section four examines the influence of experimental philosophy and

2 Rappaport R., *When Geologists were Historians, 1665-1750* (Ithaca: 1997) chap. 8; Spary E.C., *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: 2000); Terrall M., *Catching Nature in the Act: Réaumur and the Practice of Natural History in the Eighteenth Century* (Chicago: 2014).

3 Sloan P.R., "Natural History", in Haakonssen K. (ed.), *The Cambridge History of Eighteenth-Century Philosophy*, 2 vols. (Cambridge: 2006) II: 904, 932. Salomon-Bayet's *L'Institution de la science et l'expérience du vivant* (Paris: 1978) 253-269 contains an extended discussion of the influence of Bacon in France in the seventeenth and eighteenth centuries, but fails to address the nature and impact of Baconian natural history directly.

4 Roger J., *Buffon: A Life in Natural History*, trans. S.L. Bonnefoi (Ithaca: 1997).

5 Hoquet T., "History Without Time: Buffon's Natural History as a Nonmathematical Physique", *Isis* 101. 1 (2010) 30-61.

Baconian natural history on Buffon, and section five examines the views of Denis Diderot.

1 The Baconian Theory of Natural History

Only a summary presentation of Bacon's theory of natural history can be given here.⁶ There are five salient features of the Baconian theory that are of direct relevance to the development of French natural history in the seventeenth and eighteenth centuries: first, there is the place of natural history within Bacon's division of the sciences; second, the scope and content of the histories themselves; third, the role of natural history as a foundation for the theoretical stage of natural philosophy; fourth, Bacon's prescriptions for how one should write a natural history; and fifth, Bacon's own exemplar histories which were to be models of how the work was to be done. Let us take each in turn.

1.1 *The Place of Natural History in Bacon's Division of Knowledge*

In *The Advancement of Learning* (1605) Bacon has a tripartite division of knowledge into philosophy, history and poesy. Each branch corresponds to a faculty of reason: philosophy to the intellect, history to the memory and poesy to the imagination. Interestingly, natural history is part of speculative natural philosophy as opposed to operative natural philosophy. The other constituents of speculative natural philosophy are physics and metaphysics and Bacon claims that these three form a pyramidal heuristic structure such that natural history is the foundation of physics (the study of causes), and physics the basis upon which metaphysics is carried out.⁷

In the later *De dignitate et augmentis scientiarum* (1623) natural history is removed from speculative natural philosophy and placed in the bipartite division of history into natural and civil.⁸ But this is not to say that natural history is not related to natural philosophy in Bacon's mature schema. Far from it, for as he expounds the nature of natural history it becomes clear that he retains the pyramidal heuristic of natural history as the foundation of physics and then metaphysics, and that natural history is identified with core constituents

6 For more detailed treatment, see the special issue of *Early Science and Medicine* 17, 1-2 (2012).

7 Bacon Francis, *The Advancement of Learning*, Oxford Francis Bacon, vol. IV, Kiernan M. (Oxford: 2004) 62, 88, 85, 83.

8 Bacon Francis, *De dignitate et augmentis scientiarum*, *The Works of Francis Bacon*, 7 vols., Spedding J. – Ellis R. – Heath D.D. (eds.) (London: 1861-1879) vol. 4: 298.

of both operative and speculative natural philosophy.⁹ In late-seventeenth-century Britain there was little interest in Bacon's view of the place of natural history in the scheme of the sciences. However, as we shall see below, it was of great concern to Denis Diderot.

1.2 *The Content and Scope of Natural Histories*

The second feature of the Baconian theory of natural history is its prescriptions for the content and scope of the natural histories themselves. With regard to content, Bacon stipulates a threefold division of histories into generations, pretergenerations and arts. Generations are not merely concerned with biological species, but also with heavenly bodies, meteors, the earth and sea and the material elements. Pretergenerations have to do with deviations of nature from its normal course, including the study of monsters. Arts include all practices of trades as well as mechanics. Bacon calls these mechanical and experimental and considers them as natural as the study of generations and of more importance for natural philosophy than either generations or pretergenerations.¹⁰ A crucial constituent of this part of the content of natural history is experiment.¹¹

As for scope, both the threefold content and the list of titles to be 'investigated and written up' in the *Parasceve* indicate that Baconian natural histories are all-encompassing; there are no natural phenomena that are not subject to inclusion and natural historical investigation. In this Bacon follows the ancient precedent of Pliny the Elder who 'had an ideal of natural history worthy of the name but one which he quite failed to live up to in practice'.¹² To that end, we should note how the study of generations sweeps through the heavens then down to earthly geographical and geological formations and then to constituent elements of these, including plants, animals and all other natural kinds. Moreover, Bacon is at pains to stress that this is an architectonic project that is beyond the powers of one person or even one generation. It is an open-ended, colossal project and requires a community of 'agents and merchants' and the institution of a special society, Solomon's House, to be carried out.¹³

9 For a more detailed discussion see Anstey P.R., "Francis Bacon and the Classification of Natural History", *Early Science and Medicine* 17, 1-2 (2012) 11-31.

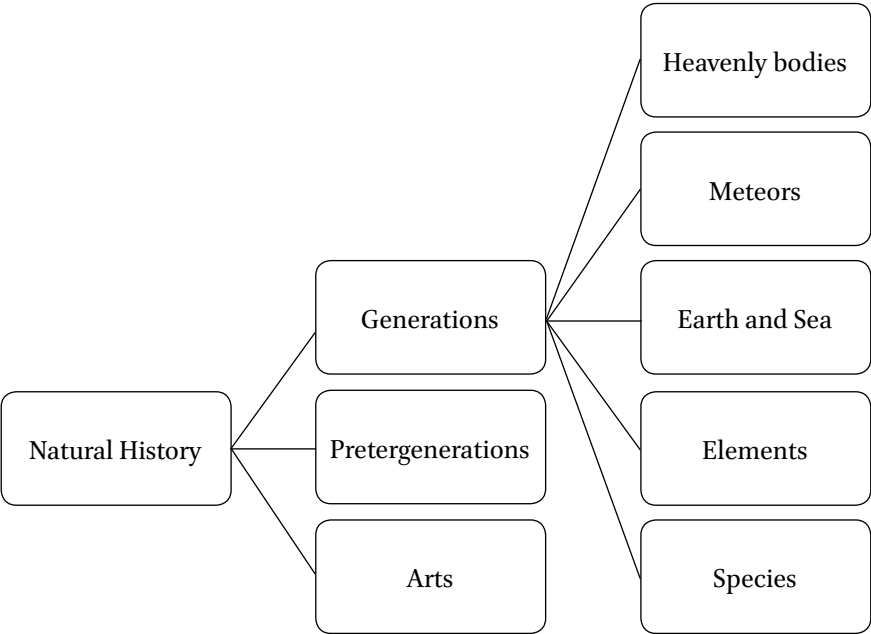
10 Bacon Francis, *A Description of the Intellectual Globe*, *Oxford Francis Bacon*, vol. VI, ed. G. Rees (Oxford: 1996) 103.

11 Bacon Francis, *Parasceve*, *Oxford Francis Bacon*, vol. XI, ed. G. Rees (Oxford: 2004) 455, 459-463.

12 Bacon, *A Description of the Intellectual Globe* 105.

13 Bacon, *Parasceve* 451-453.

TABLE 10.1 The Structure of Natural History according to Bacon



1.3 *Natural History as the Foundation for Natural Philosophy*

We turn next to the third feature of Bacon’s theory of natural history, namely, its role in generating knowledge of nature. Some inkling of what this role might be has already been provided by the pyramidal structure linking natural history with physics and metaphysics. But Bacon has much more to add to this picture. In fact, in the *De augmentis scientiarum* he develops two ‘methods of discovery’, *experientia literata* and the *interpretatio naturae*. The former involves experiment and the construction of natural histories, the latter is called the interpretation of nature or the *novum organum* and is the inductive stage which produces axioms for scientific syllogisms.¹⁴

A common misconception about Bacon’s theory of natural history is that these two stages are completely discrete and that the natural-philosophical stage, the interpretation of nature, follows on from the natural-historical stage once the latter is complete. However, a careful analysis of the respective classifications of natural history and natural philosophy, of Bacon’s views on intermediate axioms, and of his own exemplar natural histories, shows that there is

14 Bacon, *De augmentis scientiarum* 413.

a mutual interplay between the construction of natural history and the development of natural philosophy for Bacon. Natural history is the 'prime matter' or the 'nursing mother' of natural philosophy,¹⁵ but as intermediate natural philosophical axioms are developed, they reciprocally facilitate the construction of natural histories. Therefore, in addition to being the nursing mother of natural philosophy, natural history is an increasingly refined scaffold on which natural philosophy is constructed.¹⁶

1.4 *Prescriptions for the Style of a Natural History*

The form of natural history that was practised in the Renaissance has been aptly called the science of describing.¹⁷ Some of Bacon's most dismissive criticisms of Renaissance natural histories pertain to their literary style. Rather than a flowery style with copious references to past authorities, Bacon calls for an unadorned style with citations of authorities only if their credibility is in doubt. The emphasis, according to Bacon, is to be on utility, on filling a storehouse with facts rather than on entertainment and deference to ancient learning. Wordy, over-stylized and deferential histories do not produce sound foundations for natural-philosophical speculation.¹⁸ Bacon was happy to plunder previous writers for material content and illustration, but none of this was to be done for the sake of erudition. As Bacon's own exemplar natural histories show, he aimed to filter out the sources of the contents of his natural histories and to focus on the aims of assembly and construction.¹⁹

1.5 *Bacon's Exemplar Histories*

Fifth and finally, there are Bacon's own exemplar histories. He completed two of his six projected histories, namely, his histories of life and death and of winds, neither of which were subjects of natural history in the Renaissance period. In addition he left a near complete history of dense and rare and prefaces for his histories of heavy and light, sympathy and antipathy and sulphur, mercury and salt. Finally, a posthumous work, the *Sylva Sylvarum*, which was entirely different in structure and content to his published and projected histories, appeared in the year of his death. It contains ten centuries of observations

15 Bacon, *Parasceve* 451-453, 455, *A Description of the Intellectual Globe* 105; *Phenomena of the Universe*, *Oxford Francis Bacon*, vol. VI, ed. Rees G. (Oxford: 1996) 5.

16 I borrow the scaffold metaphor from Schwartz D., "Is Baconian Natural History Theory-Laden?", *Journal of Early Modern Studies* 3, 1 (2014) 63-89.

17 See Ogilvie B.W., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2006).

18 Bacon, *Parasceve* 457-459.

19 See Rees G., "Introduction", *Oxford Francis Bacon*, vol. XII (Oxford: 2007) xxi, xli-xlii.

and experiments and was his most popular work in Britain in the seventeenth century.²⁰

2 Baconian Natural History, Classificatory Natural History and Experimental Philosophy

Bacon's was the only *theory* of natural history in the seventeenth century that received detailed elaboration,²¹ and yet Baconian natural history was not the only form of natural history that was practised in the period. In addition to natural history that was done in conformity with Bacon's prescriptions, a form of natural history that was continuous with the natural history that flourished in the Renaissance was practised throughout the period. It is convenient to call this non-Baconian form classificatory natural history. It was classificatory in so far as it was concerned, not merely with describing, but with developing taxonomical schema for biological natural kinds. This was not a feature of original Renaissance natural history, which largely focused on the description of plants and animals.²² Important examples of classificatory natural history are the botanical works of John Ray and his archrival Robert Morison.²³ In late seventeenth-century Britain, most works that had the term 'natural history' in their titles were produced under the rubric of Baconian natural history and had little to do with the description and classification of natural kinds. Boyle's natural histories, for example, concerned such subjects as colours, cold, mineral waters, the air and human blood: subjects that were not within the remit of Renaissance natural history. Works of classificatory natural history, such

20 Bacon Francis, *Oxford Francis Bacon*, vols. XII and XIII, ed. G. Rees (Oxford: 2007, 2000); *Sylva Sylvarum* (London, William Lee: 1626).

21 See Boyle Robert, "Designe about Natural History", in Hunter M. – Anstey P.R. (eds.), *The Text of Robert Boyle's "Designe about Natural History"*, The Robert Boyle Project, Occasional Paper No. 3, 2008; Hooke Robert, "Things Requisite to a Natural History", in Oldroyd D., "Some Writings of Robert Hooke on Procedures for the Prosecution of Scientific Inquiry, including his 'Lectures of Things Requisite to a Natural History'", *Notes and Records of the Royal Society* 41 (1987) 145-167 (151-159).

22 See Ogilvie, *The Science of Describing* 222-229.

23 Morison Robert, *Hortus regius Blesensis auctus* (London, Thomas Roycroft: 1669); *Plantarum historiae universalis Oxoniensis pars secunda* (Oxford, Sheldonian Theatre: 1680); and *Plantarum historiae universalis Oxoniensis pars tertia* (Oxford, Sheldonian Theatre: 1699). Ray John, *Historia Plantarum [...] tomus primus* (London, Henry Faithorne: 1686); *Historia Plantarum tomus secundus*, (London, Henry Faithorne: 1688); and *Historia Plantarum tomus tertius* (London, Samuel Smith and Benjamin Walford: 1704).

as histories of plants and animals, were normally called *historia*.²⁴ As things transpired, Baconian natural history as a fully articulated 'research program' effectively disappeared in Britain around the end of the seventeenth century, whereas classificatory natural history continued on.²⁵

As I mentioned above, a prominent way, though not the only way, in which experimental philosophy was practised in England during the last four decades of the seventeenth century was according to the Baconian method of natural history. The experimental philosophers were not simply those natural philosophers who used experiments; rather they were those natural philosophers who identified with the new movement of experimental philosophy that emerged in England in the late 1650s. What characterized experimental philosophers was their emphasis on observation and experiment as the first and most important step in the acquisition of knowledge of nature. They decried any speculation, hypotheses and system building that proceeded without adequate recourse to observation and experiment. Many of them opposed what they called speculative philosophy. The student manual of the London publisher John Dunton sums up the position nicely:

Philosophy may be consider'd under these two Heads, Natural and Moral: The first of which, by Reason of the strange Alterations that have been made in it, may be again Subdivided into *Speculative* and *Experimental*. [...] we must consider, the distinction we have made of *Speculative* and *Experimental*, and, as much as possible, Exclude the first, for an indefatigable and laborious Search into Natural Experiments, they being only the Certain, Sure Method to gather a true Body of Philosophy; for the Antient Way of clapping up an entire building of Sciences, upon pure Contemplation, may make indeed an *Admirable Fabrick*, but the Materials are such as can promise no lasting one.²⁶

This distinction between experimental and speculative philosophy, so crucial for understanding developments within British natural history and philosophy, also played a prominent role in French natural philosophy from the 1730s. A quote from Samuel Parker, divine and Fellow of the Royal Society, captures

24 Ogilvie B.W., "Natural History, Ethics, and Physico-Theology", in Pomata G. – Siraisi N.C. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe* (Cambridge Mass.: 2005) 82, 98.

25 For an investigation of the demise of Baconian natural history in Britain, see Anstey P.R., "Experimental Pedagogy and the Eclipse of Robert Boyle in England", *Intellectual History Review* 25, 1 (2015) 115-131.

26 Dunton John, *The Young-Students-Library* (London, John Dunton: 1692) vi-vii.

the flavour of the experimental philosophers' position both with regard to their opposition to speculative philosophy and to the central importance of natural history:

The chief reason therefore, why I prefer the Mechanical and Experimental Philosophie before the *Aristotelean*, is not so much because of its so much greater certainty, but because it puts inquisitive men into a method to attain it, whereas the other serves only to obstruct their industry by amusing them with empty and insignificant Notions. And therefore we may rationally expect a greater Improvement of Natural Philosophie from the *Royal Society*, (if they pursue their design) then it has had in all former ages; for they having discarded all particular *Hypotheses*, and wholly addicted themselves to exact Experiments and Observations, they may not only furnish the World with a compleat *History of Nature*, (which is the most useful part of *Physiologie*) but also laye firm and solid foundations to erect *Hypotheses* upon.²⁷

For many of the Fellows of the early Royal Society and those within its ambit, experiment was conceived as a constituent of natural history. Thus, many of the most important experimental projects of the likes of Robert Boyle and Robert Hooke were explicitly set as developments of Baconian natural histories. Boyle says of his famous air-pump experiments that 'it was not my chief Design to establish Theories and Principles, but to devise Experiments, and to enrich the History of Nature with Observations faithfully made and deliver'd; that by these, and the like Contributions made by others, men may in time be furnish'd with a sufficient stock of Experiments to ground *Hypotheses* and *Theory*s on'.²⁸ Furthermore, the nascent philosophy of experiment that was developed at this time was also understood in the context of the Baconian theory of natural history.²⁹ Some British natural philosophers described what they were doing as the construction of an 'experimental natural history';³⁰ many

27 Parker Samuel, *A Free and Impartial Censure of the Platonick Philosophie* (London, William Hall for Richard Davis: 1666) 45.

28 Boyle Robert, *A Defence of the Doctrine Touching the Spring and Weight of the Air*, in *The Works of Robert Boyle*, 14 vols, eds. M. Hunter – E.B. Davis (London: 1999-2000) vol. 3: 12. Boyle also went so far as to claim that the main aim of his practice of the discipline of 'chymistry' was to further 'an Experimental History of Nature', in the *Works of Robert Boyle* XII, 365.

29 See Anstey P.R., "Philosophy of Experiment in Early Modern England: The Case of Bacon, Boyle and Hooke", *Early Science and Medicine* 19 (2014) 103-132.

30 See Oldenburg Henry, "A Preface to this Fifth Year of the Transactions", *Philosophical Transactions* 4, 45 (1669) 894.

British Baconians conceived of natural history and experimental philosophy as overlapping enterprises.³¹ This was alien to Renaissance and classificatory natural histories.

3 Baconianism and Experimental Philosophy in France³²

We turn now to Bacon's influence on the early Académie which was founded in 1666. The development of French natural philosophy and the place of natural history within it during the first half of the eighteenth century is a fascinating but complex subject. It is intimately tied with the establishment of the regional academies and their interplay with Paris,³³ and with the French reception and appropriation of British and Dutch developments such as Newtonianism and experimental philosophy. There is a discernible Baconian thread throughout this story, at times rather tenuous and at other times, more robust.

The story begins around 1663 with a "Project de la Compagnie des Sciences et des Arts" associated with Christiaan Huygens.³⁴ This document bears many parallels with the recommendations formulated across the Channel for the Royal Society of London, and may well have been influenced by the views of Sir Robert Moray with whom Huygens corresponded at the time.³⁵ The "Project" presents a grand vision of a scientific society whose work is conceived in terms strongly reminiscent of Baconian natural history:

The company will entertain commerce with all the other academies and with all scientists of every country so as to reciprocally instruct concerning that which is particular in nature and the arts and of that which is new touching books and the sciences and to observe by this means all places and seasons the winds, the hottest, the coldest [...] eclipses, comets, meteors [...] by the method of thermometers [...] of pendulums and all the other instruments necessary to be able then to make a history of

31 John Locke is a case in point. See, Anstey P.R., *John Locke and Natural Philosophy* (Oxford: 2011) chap. 3.

32 The best study of the uptake of experimental philosophy in France remains Torlais J., "La Physique expérimentale", in Taton R. (ed.), *Enseignement et diffusion des sciences en France au XVIII^e siècle* (Paris: 1964) 619-645.

33 For a survey, see Roche D., "Natural History in the Academies", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 127-144.

34 Huygens Christiaan, *Œuvres complètes*, 22 vols (The Hague: 1888-1950) vol 4, 325.

35 Hunter M. – Wood P., "Towards Solomon's House: Rival Strategies for Reforming the Early Royal Society", in Hunter M., *Establishing the New Science: The Experience of the Early Royal Society* (Woodbridge: 1989) 185-244.

nature as universal as possible, on which as on a solid foundation one can work to establish a natural philosophy and to make a parallel history of arts and of inventions of men [...].³⁶

This is a Baconian account, which defines natural history as the foundation for a solid natural philosophy. Huygens's later recommendation to Colbert is even more explicit:

The principal occupation of this assembly and the most useful must be, in my opinion, to work towards a natural history closely following the design of Verulam [i.e. Bacon]. This history consists in experiments and in remarks and is the unique method for arriving at an understanding of the causes of all that we see in nature. [...] such a history [...] will be a sure foundation on which to base natural philosophy [...].³⁷

By the late 1660s we find a steady trickle of French translations of English works promoting Baconian natural history such as Thomas Sprat's *L'Histoire de la Société Royale de Londres*, 1669, or exemplars in this genre, such as Joshua Childrey's *Britannia Baconica* translated as *Histoire des singularitez naturelles d'Angleterre, d'Ecosse, et du Pays de Galles*, 1667. We also find a flourishing group of natural philosophers practising and publishing natural history.³⁸ Interestingly, this Baconian notion that the Académie was to establish a factual foundation for theorizing is echoed in his reflections on the Académie at the end of the century in the words of Fontenelle:

the Academy is only at the stage of gathering an ample store of well-founded observations and facts, which will one day become the basis for a System. For systematic natural philosophy it must refrain from building its edifice until experimental natural philosophy [*Physique expérimentale*] is able to furnish it with the necessary materials.³⁹

36 Huygens, *Œuvres complètes* vol. 4, 27.

37 Ibidem vol. 6, 95-96; see also vol. 19, 268 sq.

38 Stroup A., *A Company of Scientists: Botany, Patronage, and Community at the Seventeenth-Century Parisian Academy of Sciences* (Berkeley: 1990); Perrault Claude, *Mémoires pour servir à l'histoire naturelle des animaux*, 2 vols (Paris: Imprimerie Royale: 1671-1676); Dodart Denis, *Mémoires pour servir à l'histoire des plantes* (Paris, Imprimerie Royale: 1676).

39 Fontenelle Bernard Le Bovier de, *Histoire du renouvellement de l'Académie Royale des Sciences* (Paris, La Veuve de Jean Boudot: 1708), sig. ciiij-v, citing Hahn's translation with modifications. See Hahn R., *The Anatomy of a Scientific Institution: The Paris Academy of Sciences, 1666-1803* (Berkeley: 1971) 33. See also Bon François-Xavier "Dissertation sur

The situation with regard to the uptake of experimental philosophy in France is, however, markedly different to its manifestation in Britain. The early Académie openly endorsed the importance of experiment in natural philosophy,⁴⁰ and one can find instances of the sort of anti-speculative and anti-hypothetical rhetoric so prevalent amongst British experimental philosophers in the anti-Cartesian polemics of the group Sophie Roux calls ‘the Old Philosophers’, such as Antoine Rochon and Jean-Baptiste de la Grange, as well as later writers such as Fontenelle.⁴¹ However, the explicit adoption of experimental philosophy as a distinctive natural-philosophical method did not occur in France until the 1730s.⁴² Voltaire’s endorsement of experimental philosophy in his letter on Bacon in the 1734 *Lettres philosophiques* and his promotion and popularization of Newtonianism were instrumental to this change.⁴³ The impact of the pedagogues of experimental philosophy, Jean Theophilus Desaguliers and Willem’s Gravesande, on the abbé Jean-Antoine Nollet during his visits to England and Holland around 1734 was also an important factor.⁴⁴ Thus in 1738, Nollet advertised his first lecture course in experimental philosophy in the brochure *Programme ou idée générale d’un cours de physique expérimentale*, and heralded the beginning of French pedagogy in experimental philosophy.⁴⁵ As a result in 1739, the reviewer of Tome IV of abbé Noël Pluche’s *Spectacle de la nature* in the *Observations sur les écrits modernes* refers to the distinction between experimental and speculative natural philosophy and speaks of *physique expérimentale* as that ‘which is today so *à la mode*’.⁴⁶ By the mid-eighteenth century it had become commonplace in France to distinguish between experimental and speculative natural philosophy: another sign that experimental philosophy was

l'utilité de la soye des araignées”, *Assemblée publique de la société royale des sciences* (Montpellier, Honoré Pech: 1710) cited in Terrall, *Catching Nature in the Act* 17.

40 For a detailed study see Salomon-Bayet C., *L’Institution de la science et l’expérience du vivant*, Première partie 29-105.

41 See Roux S., “An Empire Divided: French Natural Philosophy (1670-1690)”, in Garber D. – Roux S. (eds.), *The Mechanization of Natural Philosophy* (Dordrecht: 2013) 80-87.

42 For French reservations about experimental philosophy in the first two decades of the eighteenth century, including those of Fontenelle, see Shank J.B., *The Newton Wars and the Beginning of the French Enlightenment* (Chicago: 2008) 148-164.

43 See also Shank, *The Newton Wars* 309-311.

44 Carpenter A.T., *John Theophilus Desaguliers: A Natural Philosopher, Engineer and Freemason in Newtonian England* (London: 2011) 38.

45 Earlier attempts to teach by experiment in Paris by the likes of Polinière, did not lead to the uptake of experimental philosophy in France. See Polinière Pierre, *Expériences de physique* (Paris, Jean de Laulne: 1709).

46 *Observations sur les écrits modernes, tome dix-septième* (Paris, Hugues-Daniel Chaubert: 1739) 101, 226.

fully entrenched in France.⁴⁷ The first chair in experimental philosophy was established in 1753 and held by abbé Nollet, who was appointed as Professeur Royal de Physique Expérimentale at the Collège de Navarre.⁴⁸ His “Discours” given at his installation at the new École de Physique Expérimentale, provides a useful launching pad into our investigation of the French natural history of the period. In his first public statement of his conception of natural philosophy Nollet tells us that:

The object of experimental natural philosophy is to understand the phenomena of nature and to show the causes by factual proofs. It differs from natural history in that the latter, without rendering reasons of effects, has as its principal aim to give to us a detailed understanding of the bodies of which the universe is composed, to make us distinguish the genus, the species, the individual varieties, the relations that pertain between them and their different properties. The first of these two sciences undertakes to unveil the mechanism of nature, the latter to offer us, so to speak, an inventory of its riches. These two so lie together that it is near impossible to separate them. The natural philosopher who is not a naturalist is a man who reasons randomly about objects that he does not understand. The naturalist who is not a natural philosopher only exercises his memory.⁴⁹

Nollet clearly regards *physique expérimentale* and natural history as different disciplines, though intimately related. His description of natural history as offering ‘an inventory’ of the riches of nature giving us a detailed understanding of ‘the species, the individual varieties, the relations that pertain between them and their different properties’, indicates that he is viewing it as classificatory natural history and not as Baconian natural history.⁵⁰

The snapshot of natural-philosophical pedagogy that we can glean ten years later from the advertisements in the extraordinary *État ou Tableau de la ville de Paris* of 1763 confirms this view. There, among the list of *Cours publics*, we find

47 See Diderot Denis, *Pensées sur l'interprétation de la nature* (n.p: 1754) 53-55.

48 In England the Plumian Chair in Experimental Philosophy and Astronomy was established in Cambridge in 1708 and first held by Roger Cotes.

49 Nollet abbé, *Leçons de physique expérimentale*, tome 1, 5th edition (Paris, Hippolyte-Louis Guérin and Louis-François Delatour: 1759) xlvii.

50 Nollet had worked alongside René-Antoine Ferchault de Réaumur in the early 1730s, at the time the leading natural historian in France. No doubt Réaumur's openness to *physique* and to the development of instruments were important influences on Nollet. See, for example, Anon., *Explication des principes établis par M. de Réaumur pour la construction des thermomètres dont les degrés soient comparables* (n.p.: n.d.) 22-24.

courses in *Mathématiques naturelles*, *Histoire naturelle*, *Chymie* and *Physique expérimentale*. The course in natural history was to be given by M. Bomare de Valmont and covered minerals, plants, animals and some productions of art. The public course in *physique expérimentale* was to be given by abbé Nollet in the College de Navarre and in addition he was to give a private class 'aux Galeries du Louvre'.⁵¹ It is clear that *physique expérimentale* and *histoire naturelle* are considered to be different subjects. In contrast to the situation in late seventeenth-century Britain, in mid-eighteenth-century France natural history and experimental philosophy were discrete, though complementary disciplines.

4 Buffon, Experimental Philosophy and the Baconian Theory of Natural History

We turn to the writings of two leading French *Philosophes* in order to determine the extent to which their understanding and practice of natural history reflects the Baconian theory of natural history and the impact of experimental natural philosophy. The first one is Buffon, the French natural historian *par excellence* and the editor of the massive thirty-six-volume *Histoire naturelle, générale et particulière* which appeared from 1749-1767. In setting out the continuities and discontinuities between Buffon's theory and practice of natural history and Baconian natural history it is important to bear two things in mind.

First, the Baconian method of natural history underwent important elaboration and development over the last four decades of the seventeenth century and it is, therefore, too simplistic merely to compare Buffon with Bacon himself. Boyle, for example, with due deference to Bacon dares to 'venture to substitute another [division of the subject-matter of natural history] as that which seems to me somewhat more suitable to the Immensity and variety of the Particulars that pertain to Natural History'.⁵² One needs, therefore, to take account of the broad sweep of the theory and practice of Baconian natural history: Buffon's exposure to and models of Baconian natural history were hardly restricted to the writings of its progenitor and were framed within his appropriation of the new experimental philosophy.

Second, Buffon's *Histoire naturelle* was produced over four decades and large sections of it were composed by others. In later years Buffon was even prepared to incorporate the work of his rivals into the natural history, such as

⁵¹ *État ou Tableau de la ville de Paris, nouvelle édition* (Paris, Prault père: 1763) 192-193, 194.

⁵² Boyle, "Designe about Natural History" 3.

those portions of the volumes on birds (tomes 16-24) deriving from Réaumur.⁵³ It appears likely, therefore, that Buffon's own vision for the work, together with his conception of natural history, changed over time. What I have to say about the parallels between Buffon's *Histoire naturelle* and Baconian natural history pertains primarily to the first three volumes published simultaneously in 1749: they reveal Buffon in his most Baconian moment. Interestingly, these were the only volumes to appear in print before the publication of the "Preliminary Discourse" of the *Encyclopédie* in 1751.

The first and most salient point of continuity between Buffon and Baconian natural history concerns the role of experimental philosophy. Buffon, like Voltaire and Nollet, appears to have committed himself to experimental philosophy in the mid-1730, as the Preface to his 1735 French translation of Stephen Hales' *Vegetable Statics* shows:

The novelty of the discoveries and the majority of its [Hales' book] ideas will no doubt surprise natural philosophers. I know nothing better of its kind, and the genre itself is excellent, for it is only *experiment and observation* [...] works founded on experiment, have greater merits than others. I can even say that in natural philosophy [*Physique*], one ought to search out experiments as much as one ought to be afraid of *systems*. I admit that there is nothing so good as to establish first a single principle, and then to explain the universe, and I am convinced that if one were so happy to divine it, all the pain that it takes to make experiments would be unnecessary. But sensible people see rather how much this idea is *vain and chimerical*: the system of nature probably depends upon several principles, principles that are unknown to us and their combination even less so.

[...] It is by choice experiments, reasoned and followed, that one forces nature to reveal its secret. All the other methods have never succeeded. [...] *Collections of experiments and observations* are therefore the only books that can augment our understanding. Being a natural philosopher is not a matter of knowing what follows from this or that *hypothesis*, in supposing, for example, a subtle matter, vortices, an attractive force, etc. It is to know well that by which it comes and to understand that which is presented to our eyes. The understanding of effects will conduct us insensibly to that of their causes and will not trip us up into the absurdities that seem to characterize all *systems* [...]. It is this method that my author [Hales] has followed. It is that of the great Newton; that which Verulam,

53 See Terrall, *Caught in the Act* 198-199.

Galileo, Boyle, Stahl recommended and embraced; that which the Académie of Sciences has made it a law to adopt [...].⁵⁴

This passage is replete with the rhetoric of experimental philosophy: the emphasis on experiment and observation; the decrying of systems, principles and hypotheses; the tracing of a lineage from Bacon to Boyle and Newton. Like the Baconian natural historians before him, Buffon embraced experimental philosophy. Incidentally, Buffon's commitment to experimental philosophy also bears on a minor, though important, issue of interpretation, namely, the meaning of 'physique' in his writings. Thierry Hoquet has claimed that to translate 'physique' in Buffon's Preface to Hales as 'natural philosophy' is to 'Newtonize' Buffon.⁵⁵ However, it is not the mathematical method which characterized Newton's practice of experimental philosophy that is in view, but experimental philosophy itself. Buffon is using the term in its period sense, the one recorded in the 1751 *Dictionnaire philosophique ou introduction à la connoissance de l'homme*:

Natural philosophy is the knowledge of the causes and effects of nature. It is experimental or conjectural. Experimental natural philosophy is certain knowledge; conjectural natural philosophy is often only ingenious. The one conducts us to the truth, the other leads to error.⁵⁶

Regarding Buffon's commitment to experimental philosophy, it is manifest from the very beginning of his monumental *Histoire naturelle* and, in particular, in the first three volumes published in 1749. Opposition to system-building and hypotheses already features in the "Premier discours: De la manière d'étudier et de traiter l'histoire naturelle" where Buffon warns against the danger of premature systematizing:

54 Buffon George-Louis Leclerc, comte de, *La Statique des végétaux, et l'analyse de l'air* (Paris, Debure l'Aîné: 1735) iii-vi, emphases added.

55 Hoquet, "History without time" 41.

56 'La Physique est la connoissance des causes et des effets de la nature: elle est expérimentale, ou conjecturale. La Physique expérimentale est une connoissance certaine; la Physique conjecturale n'est souvent qu'ingénieuse; l'une nous conduit à la vérité, et l'autre nous mène à l'erreur': *Dictionnaire philosophique ou introduction à la connoissance de l'homme* (London (i.e. Paris), n.p.: 1751) 261. See also the *Dictionnaire Royal, Anglois-François, et François-Anglois* (Amsterdam, Pierre Humbert: 1719): 'The Natural Philosophy, La Physique'.

a beginning should be made by observing things often and by frequently reexamining them [...]. The essential thing is to fill the heads of such beginners with ideas and facts, and thus prevent them, if possible, from prematurely establishing schemata. [...] if you have resolved to consider things only from a certain point of view, or in a certain order, or in a certain system, although you may have taken the best road, you will never arrive at the same breadth of knowledge to which you might lay claim if, at the outset, you allowed your mind to follow its own lead.⁵⁷

As for his attitude towards hypotheses, he spends most of the second discourse of Tome I of the *Histoire naturelle* defending his cosmogonical theory against the charge that it is a mere hypothesis.⁵⁸ Yet experimental philosophers did not merely decry speculation, they gave epistemic priority to experience and promoted and practised experiment. As Buffon puts it 'Our knowledge in natural philosophy and natural history depends upon experiment and is limited to inductions'.⁵⁹ For Buffon, natural history therefore involves experiment, as the end of the "Premier discours" makes clear:

the true method of guiding one's mind in [natural history] is to have recourse to observations, to gather these together, and from them to make new observations sufficient in number to assure the truth of the principal facts [...] Above all, it is necessary to try to generalize these facts and to distinguish well those which are essential from those which are only accessories to the subject under consideration. It is then necessary to tie such facts together by analogies, confirm or destroy certain equivocal points *by means of experiment*, form one's plan of explication [...] and present them in the most natural order.⁶⁰

It is 'by means of experiment' that the process advances. Thus, the sixth chapter of Tome II of the *Histoire naturelle* lists forty-six experiments on generation. The genre of this chapter mimics the one of British experimental philosophy, as found as early as 1660 in Boyle's *Spring of the Air*, with its appeal to credible

57 Lyon J. – Sloan P.R. (eds.), *From Natural History to the History of Nature: Readings from Buffon and His Critics* (Notre Dame: 1981) 98-99.

58 See Loveland J., *Rhetoric and Natural History: Buffon in Polemical and Literary Context* (Oxford: 2001) 101.

59 Buffon George-Louis Leclerc, comte de, *Histoire naturelle, générale et particulière*, 36 vols (Paris, Imprimerie Royale: 1749-1789) vol. 1, 68: 'nos connaissances en Physique et en Histoire Naturelle dépendent de l'expérience et se bornent à des inductions'.

60 Lyon – Sloan, *From Natural History to the History of Nature* 127, emphasis added.

witnesses, its advice concerning the choice of instruments, its numbered experiments and its incorporation of the observations of others.⁶¹ This natural-historical style which characterizes Boyle's experimental natural histories, contrasts markedly with the kind of classificatory natural history that one encounters in Réaumur's *Mémoires pour servir à l'histoire des insectes* (1734-1742). Read alongside Réaumur's *magnum opus*, the early volumes of the *Histoire naturelle* appear extraordinarily novel, yet for one familiar with the British tradition of Baconian natural histories, they instantiate a French continuation of that program. Buffon was therefore clearly an advocate of experimental philosophy, but did he conceive of his undertaking in the *Histoire naturelle* as a Baconian natural history, or at least as a project continuous with the method and practice of the Baconians of the latter decades of the seventeenth century? In my view, there is compelling evidence that he did.

First, Buffon has a very Baconian conception of the scope and size of the project of natural history, discussed in the opening section of his "Premier discours" which is the introductory methodological statement that prefaces the entire *Histoire naturelle*. The "Premier discours" is the most important site for Buffon's views on the nature and rationale of the study of natural history.⁶² It is also one of the only detailed theories of natural history to be developed in France in the period, and was widely discussed by subsequent generations of philosophers.⁶³ Buffon claims:

Natural history, taken in its fullest extent, is an immense subject. It embraces all objects which the universe displays to us [...]. A single division of natural history, such as the history of insects [...] is vast enough to occupy the attention of many men. The objects which these particular branches of natural history present are so multitudinous that the most capable observers, after many years' work, have given only very imperfect rough outlines of those branches to which they have been singularly devoted.⁶⁴

Buffon's views here about the immense size of the project and the difficulty of bringing it to completion are Baconian. So too is his vision of the scope of

61 Buffon, *Histoire naturelle* vol. 2, 168-230.

62 Buffon, *Histoire naturelle* vol. 1, 3-62.

63 See, for example, Malesherbes Guillaume-Chrétien Lamoignon de, *Observations de Lamoignon-Malesherbes sur l'histoire naturelle générale et particulière de Buffon et Daubenton* 2 vols (Paris, Charles Pougens: 1798).

64 Lyon – Sloan, *From Natural History to the History of Nature* 97. One might detect a critical allusion to Réaumur here.

natural history: 'it embraces all objects which the universe displays to us'. This comprehensive scope is central to the Baconian theory of natural history. It sweeps from the heavens to the nature and structure of the Earth and the contents therein. Thus, the natural history of the Earth is to be one of the first topics of inquiry in Bacon and many of his followers, and so it is in Buffon.⁶⁵ This continuity between Buffon and the Baconian project that had faltered toward the end of the seventeenth century has been construed as a true innovation on Buffon's part by Phillip Sloan. He claims that Buffon was 'the foremost architect of this new "natural history"' because he 'broadened and altered' natural history that 'eventually resulted in a synthesis of cosmological, geological, historical, and biological questions'.⁶⁶ What Sloan has in mind here is Buffon's controversial second discourse which was concerned with the natural history of the Earth. But this was hardly an innovation on Buffon's part. Here is a sampling of heads from Bacon's *Parasceve*, Boyle's history of the Earth (as reconfigured by Peter Shaw) and Buffon's history of the Earth:

Titles from Bacon's *Parasceve*:

16. History of the Earth and sea; of their shape and extent, and how they lie in relation to each other, and how they spread out broad or narrow, of islands in the sea; the sea's gulfs; of landlocked salt lakes; of isthmuses and headlands.

18. History of the greater motions and disturbances of Earth and sea; namely of earthquakes, tremors and fissuring; [...] of the fragmenting of land by marine incursion; of the sea's invasions and inundations and, on the contrary, its retreats [...]

19. Geographical natural history; of mountains, valleys, woods, plains, sands, fens, lakes, rivers, torrents, springs, and every kind of gushing up belonging to them [...]

20. History of the ebb and flow of the sea, of channels, fluctuations and other motions of the sea.⁶⁷

65 As mentioned above, Pliny the Elder's *Natural History* had similar scope and was certainly an inspiration to Buffon who quotes from it before commencing the "Premier discours"; *Histoire naturelle* vol. 1, sig. Aiv.

66 Sloan P.R., "Natural History" 913. There is a long tradition of interpreting Buffon as an innovator in this regard. See, for example, Dieckmann H., "Natural History from Bacon to Diderot: a few Guideposts", in *Essays on the Age of the Enlightenment in Honor of Ira O. Wade*, Macary J. (ed.) (Geneva: 1977) 100-101 and Roger, *Buffon: A Life in Natural History* Part Two: A New Natural History.

67 Bacon, *Parasceve* 475-477.

Titles from Boyle's natural history of the Earth:

[The Earth] its dimensions, situation [...] its figure, plains, hills or valleys; their extent, the height of the mountains in respect of their neighbouring valleys, or the level of the sea.

The ebbings and flowings, with the age of the moon when the neap and spring-tides happen; to what height it ebbs and flows at these times upon the coast, or the islands far off in the sea [...]

How the bottom of the sea differs from the surface of the earth; with the stones and minerals to be found there.

To take notice of the winds, their changes, or set times of blowing [...]⁶⁸

General description and titles from Buffon's natural history of the Earth:

[The earth,] its heights, depths, and inequalities; the motions of the sea, the direction of mountains, the situation of rocks and quarries, the rapidity and effects of currents in the ocean, &c.

7. Of the Formation of Strata or beds in the Earth; ... 9. Of the Inequalities upon the Earth's surface; 10. Of rivers; 11. Of seas and lakes; 12. Of the tides; 13. Of Inequalities in the bottom of the sea and of currents; 14. Of regular winds; 15. Of irregular winds, Hurricanes, Water-spouts, and other Phaenomena occasioned by the Agitation of the Sea, and of the Air.⁶⁹

Buffon's natural history of the Earth is of a piece with that of Bacon, and bears striking parallels with that found in the third volume of Peter Shaw's edition of Boyle's *Works*. Again, in the *Philosophical Transactions* Boyle called for natural histories of men and women: 'And in particular, their Stature, Shape, Colour, Features, Strength, Agility, Beauty [...] Complexions, Hair, Dyet, Inclinations, and Customs that seem not due to Education [...]'. This is more or less what we find, say, in Plot's natural histories of Oxfordshire and Staffordshire. Plot deals with the stages of life, with monstrous births and many other Baconian themes.⁷⁰ Buffon's natural history of man in tomes 2 and 3 is, therefore, exactly

68 Boyle, *The Philosophical Works of the Honourable Robert Boyle Esq.*, 3 vols, ed. P. Shaw (London, William and John Innys: 1725) vol. 3, 6-7.

69 Buffon, *Histoire naturelle* tome 1: 66 and contents page quoting Smellie's translation.

70 Boyle Robert, "General Heads for a *Natural History of a Countrey Great or Small*", *Works of Robert Boyle* vol. 5, 510; Plot Robert, *The Natural History of Oxford-Shire, Being an Essay Toward a Natural History of England* (Oxford, Printed at the Theatre: 1677) chap. viii;

what one would expect from a natural historian of Bacon's ilk. What we have in Buffon then is not an innovation but a reinstatement of the Baconian scope of natural history. And Buffon does not restrict himself to Bacon's generations; he also shows a keen interest in pretergenerations as the many references to deformities and monstrous births testify.⁷¹

Secondly, Buffon's natural history of the Earth shows that he was steeped in British Baconian natural history of the previous century. Take, for example, his references to Robert Boyle. In his history of rivers in the second discourse (1: 360), Buffon cites Robert Boyle's *Experiments and Observations upon the Saltness of the Sea*, from volume three of Peter Shaw's 1725 'Abridged' and 'methodized' edition of Boyle's works. Interestingly, this volume of Boyle is divided into three sections: natural history, chymistry and medicine. The biggest section is natural history and this is an unashamed reconfiguration, truncation and compilation by Shaw of many of Boyle's natural-historical writings. It has been intentionally structured to reflect the list of topics of inquiry of Bacon's *Parasceve*. As such, Shaw's edition of Boyle 'Baconizes' Boyle's writings on natural history in a manner that goes well beyond the form in which they were originally published.⁷² It is important to stress, therefore, that it is to this edition of Boyle's writings that Buffon makes reference.

Another work that Buffon cites is the 1735 French translation of the third edition of John Woodward's *An Essay toward a Natural History of the Earth*, of 1723. This work is a natural history and provides an important point of reference for Buffon's own history. It is worth pointing out, therefore, that Woodward himself practised Baconian natural history, viewing his history of the Earth as 'a Scheme of a larger Design, and as a Sample [...] [delivering] my Sentiments on certain Heads of Natural History' and composing his own version of Boyle's classic "General Heads for a *Natural History of a Countrey*" in 1696.⁷³ Again,

idem., *The Natural History of Stafford-Shire* (Oxford, Printed at the Theatre: 1686) chap. VIII.

71 See, for example, "Os difformes", *Histoire naturelle* vol. 3, 53-64, "Os difformes par vice de conformation" vol. 3, 65; "Chien monstrueux nouveau né" vol. 5, 302, 310.

72 That Shaw was fully cognizant of Boyle's own Baconian method of natural history is evident from his summary of the method in *Philosophical Works of Robert Boyle* vol. 1, xxiv-v. For a fuller treatment see Shaw's appendix to *The Philosophical Works of Francis Bacon*, 3 vols, ed. P. Shaw (London, John and Paul Knapton et al.: 1733) vol. 2, 567-568.

73 Woodward John, *An Essay Towards a Natural History of the Earth*, 3rd edition (London, Arthur Bettesworth and William Taylor: 1723 [1st edition, 1695]) 2; idem., *Geographie physique, ou essay sur l'histoire naturelle de la terre*, trans. Pierre Noguez (Paris, Braisson: 1735); idem., *Brief Instructions for Making Observations in all Parts of the World: as also For Collecting, Preserving, and Sending over Natural Things* (London, Richard Wilkin: 1696).

Buffon frequently cites the Baconian Robert Plot's *Natural History of Stafford-Shire*.⁷⁴ This work was a sequel to Plot's *Natural History of Oxford-Shire* (1677), also cited by Buffon, which was explicitly structured around Bacon's tripartite division of natural history into generations, pretergenerations and arts which [...] 'may fall under the general notation of a *Natural History*, [...] (as the Lord Bacon well observeth)'.⁷⁵ When he comes to treat of human arts in his *Natural History of Stafford-Shire*, Plot justifies his inclusion by claiming it

'as properly falling under a *Natural History*; Art being nothing else but *Nature* restrained, forced, or fashioned, in her *matter* or *motions*: things of Art (as my Lord Bacon well observes) not differing from those of *Nature* in forme or essence, but in the efficient only.'⁷⁶

Thirdly, note Buffon's Baconian prescriptions for the style of writing a natural history:

Even the style of the description ought to be simple, clear, and measured. The nature of the enterprise does not allow of grandeur of style, of charm, even less of digressions, pleasantries, or equivocation. The sole adornment permitted is nobility of expression, of choice, and of propriety in the use of terms.⁷⁷

Buffon is opposed to the 'vast amount of useless erudition with which they [natural histories of the past] purposively stuff their works', but unlike Bacon, Boyle and Hooke, he is able to commend natural history of his own century for 'eliminating' this 'particular failing'.⁷⁸ He may well have had some of the British contributions to the project of Baconian natural history in mind as his frequent references to eighteenth-century editions of Boyle and Woodward and to the *Philosophical Transactions* suggest. This is not to say, however, that he eschewed works from the previous century: in his history of winds (Tome 1,

74 Plot, *The Natural History of Stafford-Shire*, cited at *Histoire naturelle* vol. 1, 98, 317, 570-571, supp. 2, 186.

75 Plot, *The Natural History of Oxford-Shire* 1-2. See also the review of the work in the *Philosophical Transactions* 12 (1677-1678) 876. The *Histoire naturelle* cites Plot's *Natural History of Oxford-Shire* at vol. 20, 460.

76 Plot, *Natural History of Stafford-Shire* 332.

77 Lyon – Sloan, *From Natural History to the History of Nature* 109. Given that he cites both Bacon's *Historia vitae et mortis* (*Histoire naturelle* vol. 2, 309) and Bacon's exemplar natural history of heat in Book 11 of the *Novum organum* (*Histoire naturelle* vol. 1, 82) there is no doubt that Buffon was aware of the style and content of Bacon's exemplar histories.

78 Lyon. – Sloan, *From Natural History to the History of Nature* 109, 110.

Articles XIV and XV) which bears close parallels with Bacon's own *Historia ventorum*, Buffon cites an article by Edmund Halley from volume 192 of the *Philosophical Transactions* of 1691 on the circulation of watery vapors of the sea. In this article Halley assures his readers that his theory of springs in this paper 'is not a bare *Hypothesis* but founded on Experience'.⁷⁹ This parallel between Buffon and Bacon is not devoid of irony: while they were both critical of literary adornment in the writing of natural history, both of them were renowned for their literary styles in their own right.⁸⁰

Fourthly, like many other Baconian natural historians following Bacon's recommendation, Buffon used travel literature and cautioned concerning an over-reliance on ancient authority.⁸¹ Both Roger and Rappaport have noted Buffon's use of travel literature in his history of the Earth, but fail to make the connection with Baconian natural history, and yet this is a striking point of continuity with those Baconian natural historians whom Buffon had read.⁸² Buffon was quite up-to-date: thus he frequently referred to the French translation of the recent travel diary of Thomas Shaw.⁸³

Fifthly, turning from the genre, structure and style of the *Histoire naturelle* to its content, Buffon's treatment of pre-existing hypotheses and theories and their relation to the natural history at hand is in keeping with the method of Baconian natural history. Boyle's histories reveal that he followed Bacon's view that a natural history should provide '[a] Summary but perspicuous Account of those severall Hypotheses (or at least the chief of them) that are now adays made use of'.⁸⁴ Buffon, for his part, claims 'the theory of the Earth has never hitherto been treated but in a vague and hypotheticalal manner. I shall, therefore,

79 Buffon, *Histoire naturelle* vol. 1, 357; Halley Edmund, "An Account of the Circulation of the watry Vapours of the Sea, and of the Cause of Springs", *Philosophical Transactions* 16, 192 (1691) 471.

80 On Buffon's style, see Malesherbes, *Observations sur l'histoire naturelle* 204 and d'Alembert Jean Le Rond, *Preliminary Discourse to the Encyclopedia of Diderot*, transl. and intro. R.N. Schwab (Chicago: 1995 [1751]) 94.

81 Bacon Francis, *Novum organum*, Oxford Francis Bacon, G. Rees (ed.) (Oxford: 2004) vol. 10, 133.

82 Roger, *Buffon: A Life in Natural History* 174-183; Rappaport, *When Geologists were Historians* 239. For the table of travel writers cited see *Histoire naturelle* vol. 5, xxxvii-xliv.

83 Shaw Thomas, *Voyages de Monsr. Shaw, M.D. dans plusieurs provinces de la Barbarie et du Levant*, 2 vols (The Hague, Jean Neaulme: 1743), cited at *Histoire naturelle* vol. 1, 72, 84, 101, 280, 283, 286, 357, vol. 4, 236, vol. 7, 109, 210. Buffon makes extensive use of travel literature in "Variétés dans l'espèce humaine", *Histoire naturelle* vol. 3, 371-530.

84 "Designe about Natural History" 2. For Bacon, see *Parasceve* 471.

exhibit a cursory view only of the notions of some authors who have written upon this subject'.⁸⁵

Sixthly, Buffon in the "Premier discours" picks up the common refrain found in the writings of the Baconian natural historians that 'the sole true science is the knowledge of facts'.⁸⁶ He would have encountered similar sentiments in numerous of his Baconian sources, such as Woodward's assertion that 'I shall, in the *Work* before me, give my self up to be guided wholly by *Matter of Fact*; as intending to steer that *Course* which is thus agreed of all Hands to be the *best* and *surest*'.⁸⁷ Buffon contends:

The mind itself is unable to provide this, and facts are in the sciences what experience is in ordinary life. The sciences might thus be divided into two principal classes which could contain all that is suitable for man to know. The first class encompasses the history of man in society, and the second, natural history. Both are founded upon facts [...]

This is, of course, the distinction between civil history and natural history which, while not peculiar to Bacon, was a prominent distinction in his *De augmentis scientiarum*. Bacon, for example, relegated the study of antiquities to civil history.⁸⁸ Interestingly, however, by the late seventeenth century many English Baconian natural historians, under the influence of Plot's county histories (which, in turn, found a precedent in William Camden's writings of the late sixteenth century), included the study of antiquities as part of natural history. As Plot puts it in his chapter on antiquities in his *Natural History of Stafford-Shire*, very old antiquities 'being all made and fashioned out of *Natural* things, may as well be brought under a *Natural History* as any thing of *Art*'. On this point, however, Buffon appears to follow Bacon.⁸⁹

Buffon then articulates his view of the utility of natural history:

85 Buffon, *Histoire naturelle* vol. 1, 66, quoting Smellie's translation.

86 Lyon – Sloan, *From Natural History to the History of Nature* 110.

87 Woodward, *An Essay towards a Natural History of the Earth*, 3rd edition 1. Buffon would have read this in French in *Géographie physique ou essai sur l'histoire de la terre* 1-2.

88 See, Bacon, *De augmentis scientiarum* 293 and 303. See also, Manzo S., "Francis Bacon's Natural History and Civil History: a Comparative Survey", *Early Science and Medicine* 17, 1-2 (2012) 32-61.

89 Plot, *Natural History of Stafford-Shire* 392. For Buffon's more Baconian position see *Histoire naturelle* supp. v, 1. Diderot also aligns the study of antiquities with civil history, see d'Alembert, "Preliminary Discourse" 146.

it is certain that natural history is the source of the other physical sciences and the mother of all the arts. [...] all the ideas of the arts have their models in the productions of nature. God created, and man imitates. All the inventions of men, whether they be necessities or conveniences, are only grossly executed imitations of that which nature makes with the utmost finesse.⁹⁰

Natural history *à la* Bacon is the source of other sciences and the mother of all the arts. This relationship between natural history and the sciences is brought out with greater clarity early in his natural history of the Earth:

This is the history of Nature at large, and of her principal operations, by which every other inferior or less general effect is produced. The theory of these effects constitutes what may be called the primary science, upon which a precise knowledge of particular appearances, as well as of terrestrial substances, solely depends. This species of science may be considered as appertaining to natural philosophy; but, is not all physical knowledge where system is excluded, a part of the history of nature?⁹¹

Here natural history is demarcated from natural philosophy. What is interesting, however, is the claim that the primary science, natural philosophy, is what gives us a 'precise knowledge' of particular phenomena and substances. The view seems to be that natural philosophy, while founded on natural history, stands in a reciprocal relation to natural history, giving it a precision it would not otherwise have.

Buffon's claim here bears importantly on the interpretation of Hoquet who is at pains to differentiate Buffon's conception of natural history from that of Bacon. For Hoquet, what differentiates the two is that Buffon 'appeared to dismiss the Baconian conception in his declaration that he was not aiming for the mere collection of facts';⁹² that Bacon 'maintained that it was not necessary that natural history respect any kind of order'; that, for Bacon, to do natural history is to 'just gather the data, without claiming any sort of interpretation', 'it would abandon any attempt to look for causes and stick to the act of gathering facts'.⁹³ In fact, Hoquet claims, in a manner reminiscent of the historiography

90 Lyon – Sloan, *From Natural History to the History of Nature* 110–111. See Bacon Francis, *Natural and Experimental History*, Oxford Francis Bacon, Rees G. (ed.) (Oxford: 2007) vol. 12, 13.

91 Buffon, *Histoire naturelle* tome 1: 66, adapting Smellie's translation.

92 Hoquet, "History without time" 45.

93 Ibidem 46.

of natural history of Jacques Roger, that on the Baconian approach there are really two sciences of nature: a descriptive one, natural history, and a philosophical one, natural philosophy.⁹⁴ By contrast, according to Hoquet, Buffon 'broadened it [natural history] to the philosophical theory of nature', 'transcending the Baconian herd's hamstrung empiricism' by offering 'the interpretation of nature that was the ultimate and avowed aim of Bacon's *Instauratio*'.⁹⁵

If this is Buffon's view of his project, then it must be implicit: he nowhere openly criticizes the Baconian method. In fact, his only criticisms of past natural history echo Bacon's own criticisms. Furthermore, Buffon's assertion that natural history is 'the source of the other physical sciences' does not entail that natural history and natural philosophy do not mutually influence each other. Later Baconian natural historians like Boyle thought that experimental philosophy, practised by constructing natural histories, must be complemented by speculative natural philosophy, or at least that there needs to be a creative interplay between the two.⁹⁶ Bacon, for his part, set his theory of natural history in the context of a rich heuristic that was to lead to the interpretation of nature, a heuristic that did involve the ordering, sifting and filtering of facts and experiments. It is difficult, therefore, to justify the assertion that Buffon is self-consciously differentiating himself from Bacon and that he regards his form of natural history to be an advance on the Baconian view. Yet there are discontinuities.

What is distinctive is the role of analogy, comparison and probabilism in Buffon's comments on what can be gleaned from the factual base of natural history.⁹⁷ This reflects the demise of the widely held ideal of a demonstrative natural philosophy, a *scientia*, rather than a revised conception of natural history *per se*. For example, Buffon claims that we must raise ourselves:

to something greater and still more worthy of our efforts, namely: the combination of observations, the generalization of facts, linking them together by the power of analogies, and the effort to arrive at a high degree of knowledge. From this level we can judge that particular effects depend upon more general ones; we can compare nature with herself in her vast operations; and, finally, we are able to open new routes for the further perfection of the various branches of natural philosophy.⁹⁸

94 Hoquet T., *Buffon: histoire naturelle et philosophie* (Paris: 2005) 77-78. For Roger, see *Buffon: A Life in Natural History* 65-76.

95 Hoquet, "History without time" 46, 47.

96 Boyle, "Designe about Natural History" 2.

97 See, for example, Buffon, *Histoire naturelle* vol. 1, 68.

98 Lyon – Sloan, *From Natural History to the History of Nature* 121.

Natural philosophy here is conceived as a branched system of disciplines rather than along the lines of the Baconian, integrated, axiom-based *scientia*. When Buffon speaks of ‘the other sciences’, his referent differs from Bacon’s *scientiae* and has a far more contemporary ring. Rational mechanics and chemistry, for example, are within its purview in a way that was impossible in the time of Bacon.

There is another marked difference between Buffon’s *Histoire naturelle* and the work of earlier British Baconian natural historians. For the British Baconians the description and classification of natural kinds was subsumed under the broader Baconian rubric, but rarely included in actual natural historical writings. Buffon’s *Histoire naturelle*, by contrast has a far stronger emphasis on what we now call biological natural kinds.⁹⁹ The primary subject matter of the *Histoire naturelle* is what in Bacon’s schema are generations. Thus, it is living things that he has in mind when Buffon urges in the “Premier discours”:

The precise description and the accurate history of each thing is, as we have said, the sole end which ought to be proposed initially. So far as the description is concerned, one ought to show form, size, weight, colors, positions of rest and of movement, location of organs, their connections, their shape, their action, and all external functions.¹⁰⁰

This emphasis enables Buffon to measure his own work in relation to the pre-eminent practitioner of classificatory natural history, Linnaeus. And, indeed, much of the rest of the “Premier discours” is a discussion of the problem of the natural system, a critique of Linnaeus and Aldrovandi, and an assessment of Plinian and Aristotelian ancient natural history – yet set within the context of a commitment to the experimental philosophy, which provides the salient methodological backdrop to Buffon’s approach to natural history. Thus, in the second chapter of Tome 2 of the *Histoire naturelle*, in the midst of his discussion of the generation of animals, Buffon expresses his caution in the deployment of hypotheses that appeal to final causes and foundational principles.¹⁰¹

Buffon’s conception of natural history in the “Premier discours” and in the first three volumes of the *Histoire naturelle* therefore has many continuities with the Baconian conception with respect to its scope, style and content. Yet

99 Roger (Buffon: *A Life in Natural History* 268) points out that Buffon’s *Histoire naturelle* describes ‘more than four hundred species or genera of quadrupeds and birds’, though much of this classificatory natural history derives from the work of others.

100 Lyon – Sloan, *From Natural History to the History of Nature* 111.

101 Lyon – Sloan, *From Natural History to the History of Nature* 176–177.

the work as a whole contains vast amounts of classificatory natural history. It is almost certainly Buffon's emphasis in the later volumes on description and classification that has led to the neglect of the very strong connections between the first three volumes and the Baconian natural histories that preceded and inspired them. It would certainly be wrong to claim that Buffon's conception of natural history is identical to that of either Bacon, Boyle or Plot, yet his theory and practice of natural history are surely continuous with those of his esteemed English predecessors. And Buffon is not the only Baconian *philosophe*. We turn now to his compatriot Denis Diderot.

5 Diderot and the Baconian Theory of Natural History

There are many sites of methodological reflection in Diderot's writings, not least his wonderful *Pensées sur l'interprétation de la nature* of 1754, but our discussion of the impact of the Baconian theory of natural history on Diderot must begin with the "Prospectus" appended to the 1751 "Discours préliminaire" which prefaced the first volume of the *Encyclopédie*.¹⁰²

Bacon's scheme of the sciences is the primary inspiration and model for the structure of the divisions of the sciences developed by d'Alembert and Diderot in the "Preliminary Discourse".¹⁰³ They openly acknowledge that this is their greatest debt to Bacon. So close is the system that they developed to that of Bacon, that Diderot provides an appendix explaining just how the two systems differ. Natural history features in both divisions, and while there are subtle variations, it is fair to say that the editors have taken over the first feature of the Baconian theory almost wholesale: natural history has an almost identical location in the "Preliminary Discourse" to that in the *De augmentis scientiarum*, even to the point that it is set up in relation to a tripartite-faculty psychology of memory, imagination and reason.

In fact, Diderot's description of the divisions of natural history is derived directly from the *De augmentis scientiarum* with additions from the *Parasceve* appended to the *Novum organum*.¹⁰⁴ There is a strong emphasis on the facts of nature, similar to that found in Buffon. Moreover, Diderot copies the tripartite division into generations, monsters and arts. Let us compare his treatment of uniform nature, i.e. generations, with that of Bacon.

102 First published in 1750 and later appended to the "Preliminary Discourse".

103 For Bacon's influence on d'Alembert, see Anstey P.R., "D'Alembert, the 'Preliminary Discourse', and Experimental Philosophy", *Intellectual History Review* 24, 4 (2014) 495-516.

104 "Preliminary Discourse" 146-148.

The *history of uniform nature* is divided, following its principal objects, into: *celestial history* or *history of the stars*, of *their movements*, *sensible appearances*, etc., *without explaining their cause by systems, hypotheses*, etc. (It is a matter here only of pure phenomena.) Into *meteorological history* such as *winds, rains, tempests, thunder, aurora borealis*, etc. Into the *history of the earth and the sea*, or of *mountains, rivers, streams, currents, tides, sands, soils, forests, islands, configurations of the earth, continents*, etc. Into *history of minerals*, into *history of vegetables*, into *history of animals*. Whence results a *history of the elements*, of the *apparent nature, sensible effects, movements*, etc., of *fire, air, earth, and water*.¹⁰⁵

Bacon's text runs as follows:

For the history of Generations is composed of five subordinate parts. First, a history of the *Celestial Bodies*, exhibiting the actual phenomena simply and apart from theories. Second, a history of *Meteors* (including comets), and what they call the *Regions of the Air*; for there is no history of comets, fiery meteors, *winds, rains, storms, and the like*, which is of any value. Third, a history of the *Earth and Sea* (considered as integral parts of the universe), *mountains, rivers, tides, sands, woods, islands, and the shapes of continents* as they lie [...] ¹⁰⁶

Little wonder that Diderot was accused of plagiarism when the "Prospectus" was first published in 1750.

Turning next to Diderot's *Pensées*, many scholars have noted its Baconian character.¹⁰⁷ First, like Bacon's *Novum organum*, it is written in aphoristic form. Moreover, we can tell from its title that it is Diderot's own version of Bacon's *interpretatio naturae* and the content of the work reveals unambiguously that it is written from the perspective of the experimental philosophy, even if Diderot sees a more creative interplay of experiment and speculation than many experimental philosophers would allow and especially the *anti-système* philosophes such as d'Alembert and Condillac.¹⁰⁸

105 D'Alembert, "Preliminary Discourse" 147, italics original, bold italics added.

106 Bacon, *De augmentis scientiarum* 299.

107 See, for example, Roger J., *Les Sciences de la vie dans la pensée française du XVII^e siècle*, 2nd edition (Paris: 1963) 603-606.

108 Dieckmann has pointed out that the title of the very rare 1753 edition, *De l'interprétation de la nature*, is closer to Bacon's *interpretatio naturae* than the title of the 1754 edition. See Dieckmann H., "The First Edition of Diderot's *Pensées sur l'interprétation de la nature*", *Isis* 46, 3 (1955) 258.

Perhaps the most striking borrowing from Bacon in the *Pensées* is the use of Bacon's metaphor of natural philosophers 'groping in the dark'. Bacon introduces his distinction between practitioners of *experientia literata* and *interpretatio naturae* as follows:

[the former] may grope his way for himself in the dark; he may be led by the hand of another, without himself seeing anything; or lastly, he may get a light [from the latter], and so direct his steps.

Analogously, Diderot distinguishes experimental from speculative natural philosophy, *l'expérimentale* and *la rationnelle*:

the one goes blindfolded, always groping forward, grabbing all that comes to hand [...] the other collects these precious materials and attempts to make them into a torch [...]¹⁰⁹

Diderot also shares Bacon's sense of the immensity of the project of natural history. Early in the *Pensées*, he speaks of experimental philosophy [*philosophie expérimentale*] working century after century piling up materials.¹¹⁰ But for Diderot, this should not happen independently of philosophical reflection: picking up Bacon's metaphor of the bee from the *Novum organum*, he claims that there should be an ongoing reciprocal relation between the work of the senses and the work of reflection.¹¹¹

Again, the *Pensées* ends with conjectures that mimic Newton's queries to the *Opticks* and with a series of queries, in true Baconian form. The additions to subsequent editions and the open-endedness of the final sections are staples of the genre. It stands to Bacon's *Novum organum* (particularly Book II) and his *De augmentis scientiarum*, as Buffon's *Histoire naturelle* stands to Bacon's natural historical writings, and to Bacon's vision of what an integrated natural history would look like. In sum, the title, the literary forms deployed and the contents, inflected as they are through the central tenets of experimental philosophy, render the *Pensées* a truly Baconian work.

109 Bacon, *De augmentis scientiarum* 413 and Diderot, *Pensées sur l'interprétation de la nature* 53. *ibidem* 26-27 and Bacon, *Novum organum* 153.

110 Diderot, *Pensées sur l'interprétation de la nature* 18.

111 *Ibidem* 26-27 and Bacon, *Novum organum* 153.

6 Conclusion

Many years ago, Phillip Sloan argued that there were two ‘radically different’ types of natural history in the eighteenth century. The first, an approach to which Bacon made a significant contribution, emphasized the collecting, description and classification of specimens: ‘one well-defined tradition of natural history had developed through the early modern period in an isomorphic relation with that of antiquity’.¹¹² The greatest exemplar of this type of natural history in the eighteenth century was Carl Linnaeus, while in France, the approach was exemplified by Réaumur. The second type of natural history was that of Buffon which aimed at a broader and more general natural history that included more than mere descriptions and taxonomical schema, and led to a deeper understanding of the processes of change and development in nature. This historiography of Enlightenment natural history has been influential, being endorsed most recently by Kurt Ballstadt in his book-length study of Diderot’s natural philosophy.¹¹³

If the argument of this paper is correct, however, Sloan’s analysis has it exactly the wrong way around. It was Buffon who stood in the Baconian tradition of natural history as practised by the late-seventeenth-century experimental philosophers like Boyle, Hooke and Woodward. And it was Linnaeus and Réaumur who practised a form of natural history that had its roots in the Renaissance.¹¹⁴

Selective Bibliography

- Anon., *Dictionnaire philosophique ou introduction à la connoissance de l’homme* (London, n.p.: 1751).
- Anon., *Dictionnaire Royal, Anglois-François, et François-Anglois*, tome II (Amsterdam, Les Frères van Dole and Isaac Vaillant: 1719).
- Anon., *État ou Tableau de la ville de Paris, nouvelle édition* (Paris, Paruault père et al.: 1763).
- Anon., *Explication des principes établis par M. de Réaumur pour la construction des thermomètres dont les degrés soient comparables* (n.p.: n.d.).

112 Sloan P.R., “Natural History, 1670-1802”, in Olby R.C. et al. (eds.) *Companion to the History of Modern Science* (London: 1990) 297 and passim.

113 Ballstadt K., *Diderot: Natural Philosopher* (Oxford: 2008) 131-134.

114 I should like to thank Raphaële Garrod, Richard Serjeantson, Alberto Vanzo and John Zammito for comments on an earlier version of this paper.

- Anon., *Observations sur les écrits modernes, tome dix-septième* (Paris, Hugues-Daniel Chaubert: 1739).
- Anon., "Review of Plot R., *The Natural History of Oxford-Shire, Being an Essay Toward a Natural History of England*", *Philosophical Transactions* 12 (1677-1678) 875-879.
- Anstey P.R., "Experimental versus speculative natural philosophy", in Anstey P.R. – Schuster J.A. (eds.), *The Science of Nature in the Seventeenth Century: Patterns of Change in Early Modern Natural Philosophy* (Dordrecht: 2005) 215-242.
- Anstey P.R., *John Locke and Natural Philosophy* (Oxford: 2011).
- Anstey P.R., "Francis Bacon and the Classification of Natural History", *Early Science and Medicine* 17, 1-2 (2012) 11-31.
- Anstey P.R., "Philosophy of Experiment in Early Modern England: The Case of Bacon, Boyle and Hooke", *Early Science and Medicine* 19 (2014) 103-132.
- Anstey P.R., "Experimental Pedagogy and the Eclipse of Robert Boyle in England", *Intellectual History Review* 25, 1 (2015) 115-131.
- Anstey P.R., "D'Alembert, the 'Preliminary Discourse', and Experimental Philosophy", *Intellectual History Review* 24, 4 (2014) 495-516.
- Anstey P.R. – Vanzo A., "The Origins of Early Modern Experimental Philosophy", *Intellectual History Review* 22, 1 (2012) 1-20.
- Bacon Francis, *Sylva Sylvarum* (London, William Lee: 1626).
- Bacon Francis, *The Philosophical Works of Francis Bacon*, ed. P. Shaw, 3 vols. (London, John and Paul Knapton et al.: 1733).
- Bacon Francis, *The Works of Francis Bacon*, 7 vols, eds. J. Spedding J. – R. Ellis – D.D. Heath (London: 1861-1879).
- Bacon Francis, *The Oxford Francis Bacon*, 15 vols, eds. G. Rees, (Oxford: 1996-).
- Ballstadt K., *Diderot: Natural Philosopher* (Oxford: 2008).
- Bon François-Xavier, "Dissertation sur l'utilité de la soye des araignées", *Assemblée publique de la société royale des sciences* (Montpellier, Honoré Pech: 1710).
- Boyle Robert, *The Philosophical Works of the Honourable Robert Boyle Esq.*, 3 vols, ed. P. Shaw (London, William and John Innys: 1725).
- Boyle Robert, *The Works of Robert Boyle*, 14 vols, eds. M. Hunter – E.B. Davis (London: 1999-2000).
- Boyle Robert, *The Text of Robert Boyle's "Designe about Natural History"*, eds. M. Hunter – P.R. Anstey (London: 2008).
- Buffon Leclerc George-Louis, comte de, "Préface du traducteur" to *La statique des végétaux, et l'analyse de l'air* (Paris, Debure l'Aîné: 1735).
- Buffon Leclerc George-Louis, comte de, *Histoire naturelle, générale et particulière*, 36 vols (Paris, Imprimerie Royale: 1749-1789) iii-viii.
- Carpenter A.T., *John Theophilus Desaguliers: A Natural Philosopher, Engineer and Freemason in Newtonian England* (London: 2011).

- Childrey Joshua, *Britannia Baconica: Or, The Natural Rarities of England, Scotland, and Wales* (London, Printed for the Author: 1662).
- Childrey Joshua, *Histoire des singularitez naturelles d'Angleterre, d'Ecosse, et du Pays de Galles*, trans. P. Briot (Paris, R. de Ninville: 1667).
- D'Alembert Jean Le Rond, 'Preliminary Discourse' to the *Encyclopedia of Diderot*, trans and intro by R.N. Schwab (Chicago: 1995 [French edition 1751]).
- Diderot Denis, *De l'interprétation de la nature* (n.p.: 1753).
- Diderot Denis, *Pensées sur l'interprétation de la nature* (n.p.: 1754).
- Diderot Denis – D'Alembert Jean Le Rond (eds.), *Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers*, ed. R. Morrissey (University of Chicago: ARTFL Encyclopédie Projet, Spring 2010 Edition) <http://encyclopedia.uchicago.edu/>.
- Dieckmann H., "The First Edition of Diderot's *Pensées sur l'interprétation de la nature*", *Isis* 46, 3 (1955) 251-267.
- Dieckmann H., "Natural History from Bacon to Diderot: a Few Guideposts", in Macary J. (ed.), *Essays on the Age of the Enlightenment in Honor of Ira O. Wade* (Geneva: 1977) 93-112.
- Dodart Denis, *Mémoires pour servir à l'histoire des plantes* (Paris, Imprimerie Royale: 1676).
- Dunton John, *The Young-Students-Library* (London, John Dunton: 1692).
- Fontenelle Bernard Le Bovier de, *Histoire du renouvellement de l'Académie Royale des Sciences* (Paris, La Veuve de Jean Boudot: 1708).
- Hahn R., *The Anatomy of a Scientific Institution: The Paris Academy of Sciences, 1666-1803* (Berkeley: 1971).
- Hales Stephen, *Vegetable Staticks* (London, W. and J. Innes: 1727).
- Hales Stephen, *La Statique des végétaux et l'analyse de l'air*, trans. George-Louis Leclerc, comte de Buffon (Paris, Debure l'Aîné: 1735).
- Halley Edmund, "An Account of the Circulation of the watry Vapours of the Sea, and of the Cause of Springs", *Philosophical Transactions* 16, no. 192 (1691) 468-473.
- Hoquet T., *Buffon: histoire naturelle et philosophie* (Paris: 2005).
- Hoquet T., "History Without Time: Buffon's Natural History as a Nonmathematical Physique", *Isis* 101. 1 (2010) 30-61.
- Hunter M. – Wood P., "Towards Solomon's House: Rival Strategies for Reforming the Early Royal Society", in Hunter M., *Establishing the New Science: The Experience of the Early Royal Society* (Woodbridge: 1989) 185-244.
- Huygens C., *Œuvres complètes de Christiaan Huygens*, 22 vols. (The Hague: 1888-1950).
- Loveland J., *Rhetoric and Natural History: Buffon in Polemical and Literary Context* (Oxford: 2001).
- Lyon J. – Sloan P.R. (eds.), *From Natural History to the History of Nature: Readings from Buffon and His Critics* (Notre Dame: 1981).

- Malesherbes Guillaume-Chrétien Lamoignon de, *Observations de Lamoignon-Malesherbes sur l'histoire naturelle générale et particulière de Buffon et Daubenton* 2 vols. (Paris, Charles Pougens: 1798).
- Manzo S., "Francis Bacon's Natural History and Civil History: a Comparative Survey", *Early Science and Medicine* 17, 1-2 (2012) 32-61.
- Morison Robert, *Hortus regius Blesensis auctus* (London, Thomas Roycroft: 1669).
- Morison Robert, *Plantarum historiae universalis Oxoniensis pars secunda* (Oxford, Sheldonian Theatre: 1680).
- Morison Robert, *Plantarum historiae universalis Oxoniensis pars tertia* (Oxford, Sheldonian Theatre: 1699).
- Newton Sir Isaac, *Opticks*, 2nd English edition (London, William Bowyer for William Innys: 1717).
- Nollet abbé Jean-Antoine, *Cours de physique expérimentale chez M. l'abbé Nollet* (Paris, Pierre-Gilles Le Mercier: 1735).
- Nollet abbé Jean-Antoine, *Programme ou idée générale d'un cours de physique expérimentale* (Paris, Pierre-Gilles Le Mercier: 1738).
- Nollet abbé Jean-Antoine, *Leçons de physique expérimentale*, tome 1, 5th edition (Paris, Hippolyte-Louis Guérin and Louis-François Delatour: 1759).
- Ogilvie B.W., "Natural History, Ethics, and Physico-Theology", in Pomata G. – Siraisi N.C. (eds.), *Historia: Empiricism and Erudition in Early Modern Europe*, (Cambridge MA: 2005) 75-103.
- Ogilvie B.W., *The Science of Describing: Natural History in Renaissance Europe* (Chicago: 2006).
- Oldenburg Henry, "A Preface to this Fifth Year of the Transactions", *Philosophical Transactions* 4 no. 45 (1669) 893-898.
- Oldroyd D., "Some Writings of Robert Hooke on Procedures for the Prosecution of Scientific Inquiry, including his "Lectures of Things Requisite to a Natural History", *Notes and Records of the Royal Society* 41 (1987) 145-167.
- Parker Samuel, *A Free and Impartial Censure of the Platonick Philosophie* (Oxford, William Hall for Richard Davis: 1666).
- Perrault Claude, *Mémoires pour servir à l'histoire naturelle des animaux*, 2 vols. (Paris, Imprimerie Royale: 1671-1676).
- Plot Robert, *The Natural History of Oxford-Shire, Being an Essay Toward a Natural History of England* (Oxford, Printed at the Theatre: 1677).
- Plot Robert, *The Natural History of Stafford-Shire* (Oxford, Printed at the Theatre: 1686).
- Pluche Noël-Antoine, *Le Spectacle de la Nature*, tome IV (Paris, La Veuve Estienne: 1739).
- Polinière Pierre, *Expériences de physique* (Paris, Jean de Laulne: 1709).
- Rappaport R., *When Geologists Were Historians, 1665-1750* (Ithaca: 1997).

- Ray John, *Historia Plantarum* [...] *tomus primus* (London, Henry Faithorne: 1686).
- Ray John, *Historia Plantarum tomus secundus* (London, Henry Faithorne: 1688).
- Ray John, *Historia Plantarum tomus tertius* (London, Samuel Smith and Benjamin Walford: 1704).
- Réaumur René-Antoine Ferchault de, *Mémoires pour servir à l'histoire des insectes*, 6 vols (Paris, Imprimerie Royale: 1734-1742).
- Roche D., "Natural History in the Academies", in Jardine N. – Secord J.A. – Spary E.C. (eds.), *Cultures of Natural History* (Cambridge: 1996) 127-144.
- Roger J., *Les Sciences de la vie dans la pensée française du XVII^e siècle*, 2nd edition (Paris: 1963).
- Roger J., *Buffon: A Life in Natural History*, trans. S.L. Bonnefoi (Ithaca: 1997) [French edition 1989].
- Roux S., "An Empire Divided: French Natural Philosophy (1670-1690)", in Garber D. – Roux S. (eds.), *The Mechanization of Natural Philosophy* (Dordrecht: 2013) 55-95.
- Salomon-Bayet C., *L'Institution de la science et l'expérience du vivant* (Paris: 1978).
- Schwartz D., "Is Baconian Natural History Theory-Laden?", *Journal of Early Modern Studies* 3, 1 (2014) 63-89.
- Shank J.B., *The Newton Wars and the Beginning of the French Enlightenment* (Chicago: 2008).
- Shaw Thomas, *Voyages de Monsr. Shaw, M.D. dans plusieurs provinces de la Barbarie et du Levant*, 2 vols (The Hague, Jean Neaulme: 1743) [1st English edition, 1738].
- Sloan P.R., "Natural History, 1670-1802", in Olby R.C. et al. (eds.), *Companion to the History of Modern Science* (London: 1990) 295-313.
- Sloan P.R., "Natural History", in Haakonssen K. (ed.), *The Cambridge History of Eighteenth-Century Philosophy*, 2 vols (Cambridge: 2006) vol. 2, 903-938.
- Spary E.C., *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: 2000).
- Sprat Thomas, *L'Histoire de la Société Royale de Londres*, trans. J. Du Moulin (Geneva, Jean Herman Widerhold: 1669).
- Stroup A., *A Company of Scientists: Botany, Patronage, and Community at the Seventeenth-Century Parisian Academy of Sciences* (Berkeley: 1990).
- Terrall M., *Catching Nature in the Act: Réaumur and the Practice of Natural History in the Eighteenth Century* (Chicago: 2014).
- Torlais J., "La Physique expérimentale", in Taton R. (ed.) *Enseignement et diffusion des sciences en France au XVIII^e siècle* (Paris: 1964) 619-645.
- Voltaire, François-Marie Arouet, dit, *Lettres philosophiques* (Amsterdam, E. Lucas: 1734).
- Woodward John, *An Essay toward a Natural History of the Earth* (London, Richard Wilkin: 1695).

Woodward John, *Brief Instructions for Making Observations in all Parts of the World: as also For Collecting, Preserving, and Sending over Natural Things* (London, Richard Wilkin: 1696).

Woodward John, *An Essay Towards a Natural History of the Earth*, 3rd edition (London, Arthur Bettesworth and William Taylor: 1723).

Woodward John, *Geographie physique, ou essay sur l'histoire naturelle de la terre*, trans. Pierre Noguez (Paris, Braisson: 1735).

La permanence des savoirs antiques dans l'histoire naturelle du second XVIII^e siècle

Stéphane Schmitt

On peut lire à la fois dans l'*Histoire naturelle* de Buffon et dans l'*Encyclopédie* de Diderot et d'Alembert, deux ouvrages souvent jugés emblématiques de la pensée des Lumières et représentatifs d'une certaine modernité de la science de l'époque, une curieuse anecdote sur la capture des petits de la tigresse. Ainsi, selon Buffon,

la tigresse produit, comme la lionne, quatre ou cinq petits ; elle est furieuse en tous temps, mais sa rage devient extrême lorsqu'on les lui ravit ; elle brave tous les périls, elle suit les ravisseurs, qui se trouvant pressés sont obligés de lui relâcher un de ses petits ; elle s'arrête, le saisit, l'emporte pour le mettre à l'abri, revient quelques instans après et les poursuit jusqu'aux portes des villes ou jusqu'à leurs vaisseaux : et lorsqu'elle a perdu tout espoir de recouvrer sa perte, des cris forcenés et lugubres, des hurlemens affreux expriment sa douleur cruelle et font encore frémir ceux qui les entendent de loin¹.

La source de cette histoire aussi pittoresque que douteuse n'est pas précisée par le naturaliste français, qui semble d'ailleurs l'admettre sans difficulté. En revanche, l'auteur anonyme de l'article "Tigre" dans l'*Encyclopédie*, qui rapporte le même récit, en indique clairement l'origine :

¹ Buffon Georges-Louis Leclerc, Comte de – Daubenton Louis-Jean-Marie, *Histoire naturelle, générale et particulière*, 15 vols. (Paris, Imprimerie Royale : 1749-1767) vol. 9, 140-141. Nous renvoyons toujours dans cet article à la pagination de l'édition originale ; cependant, pour les huit premiers volumes, nous utilisons l'édition en cours des *Œuvres complètes*, éd. S. Schmitt – C. Crémière, 10 vols. parus en 2017 (Paris : 2007-). Les autres séries qui composent l'*Histoire naturelle* sont : Buffon Georges-Louis Leclerc, Comte de – Guéneau de Montbeillard Philippe, *Histoire naturelle des oiseaux*, 9 vols. (Paris, Imprimerie Royale : 1770-1783) ; Buffon, *Histoire naturelle des minéraux*, 5 vols. (Paris, Imprimerie Royale puis Imprimerie de Bâtimens du Roi : 1783-1788) ; Buffon, *Histoire naturelle. Supplément*, 7 vols. (Paris, Imprimerie Royale : 1774-1789) ; s'y ajoutent huit volumes sur les quadrupèdes ovipares, serpents, poissons et cétaqués publiés par Lacepède entre 1788 et 1804. L'abbé Gabriel Bexon a participé à l'écriture de l'*Histoire naturelle des oiseaux*, mais sans signer ses contributions.

Pline, *l.VIII. c.xviii*. nous a décrit le moyen qu'on employoit de son tems pour enlever les jeunes *tigres* à la mere, et les transporter à Rome. Les Hircaniens et les Indiens, dit-il, sont obligés, quand ils prennent les petits *tigres*, de les emporter bien vite sur un cheval ; car quand la mere ne les trouve plus, elle sent leurs traces, les suit avec une promptitude furieuse ; et la personne qui les emporte, n'a rien de mieux à faire quand il est atteint par la tigresse, que de lui jeter un de ses petits à terre ; alors elle le prend dans sa gueule, le porte dans son trou, et revient bien-tôt après ; on l'amuse en répétant la même manœuvre, jusqu'à ce qu'on soit sur le vaisseau, d'où l'on entend la tigresse qui n'ose se jeter dans l'eau, pousser des hurlemens affreux sur le rivage².

C'est donc au naturaliste romain Pline l'Ancien que cette anecdote a été empruntée, aussi bien par Buffon que par l'encyclopédiste, et de fait, l'un et l'autre suivent d'assez près le texte original³. Le second montre certes une distanciation absente chez Buffon ; cependant, il ne semble faire aucun doute pour lui que l'on procédait bien ainsi, dans l'Antiquité, pour enlever les petits de la tigresse.

Cet exemple n'est pas isolé. Aussi bien dans l'*Histoire naturelle* que dans l'*Encyclopédie* et, plus généralement, dans la littérature naturaliste de la seconde moitié du XVIII^e siècle, le savoir ancien est omniprésent, et s'il est parfois traité à titre documentaire, c'est-à-dire comme un témoignage sur les connaissances et les techniques des peuples de l'Antiquité, il est bien souvent aussi considéré, à l'instar des travaux modernes, comme une source fiable sur les objets et phénomènes naturels. Certes, tous les emprunts n'ont pas le caractère quasi prodigieux de la chasse décrite par Pline, et il s'agit plus souvent de renseignements plausibles pour un lecteur du XVIII^e siècle, voire pour un lecteur actuel. Il n'en demeure pas moins qu'une telle permanence peut surprendre à une époque aussi tardive, alors même que l'immense accumulation de données nouvelles désormais disponibles sur les animaux, les végétaux et

2 *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers, par une société de gens de lettres*, 17 vols. (Paris, Antoine-Claude Briasson – Michel-Antoine David l'Aîné – André-François Le Breton – Laurent Durand : 1751-1757, et Neuchâtel, Samuel Faulche : 1765) vol. 16 : 328.

3 'Tigrim Hyrcani et Indi ferunt, animal velocitatis tremendae et maxime cognitae, dum capitur totus eius fetus, qui semper numerosus est. Ab insidiante rapitur equo quam maxime pernici atque in recentes subinde transfertur. At ubi vacuum cubile reperit fera – maribus enim subolis non cura est –, fertur praeceps odore vestigans. Raptor adpropinquante fremitu abicit unum ex catulis ; tollit illa morsu et pondere etiam ocior acta remeat iterumque consequitur ac subinde, donec in navem regresso inrita feritas saevit in litore'. Pline l'Ancien, *Naturalis historia* VIII, 66.

les minéraux du monde entier pourrait rendre dépassées, dans une large mesure, les informations héritées d'auteurs tels que Pline ou Aristote.

L'histoire naturelle connaît en effet au XVIII^e siècle un succès spectaculaire, même si sa définition demeure encore relativement vague⁴. Telle qu'on l'entend alors au sens le plus général, cette discipline correspond à l'étude de toutes les productions naturelles (minérales, végétales et animales) et à un ensemble de pratiques associées (observations, herborisations, collections ...). Elle présente donc de fortes ressemblances avec l'histoire naturelle telle qu'on a pu la définir au XIX^e siècle ou plus tard. Elle s'en distingue cependant par d'importants aspects. En premier lieu, son champ et ses enjeux restent encore mal délimités et font l'objet de tensions entre plusieurs courants. Ainsi, elle est souvent jugée descriptive et opposée à ce titre à la 'physique', discipline consacrée quant à elle à la recherche des causes; mais un auteur comme Buffon rejette vigoureusement une telle distinction, et les classificateurs comme Linné (également critiqués par Buffon), en quête d'un ordre naturel, ne se contentent pas non plus d'une pure description. Elle englobe en outre, à des degrés divers selon les auteurs, des domaines qui en ont été exclus par la suite, comme l'étude de l'être humain et de sa diversité (*grosso modo*, ce qu'on appellerait aujourd'hui l'anthropologie) ou des questions utilitaires (élevage, chasse, pharmacologie ...). De même, si des aspects tels que l'emblématique, l'allégorie ou les anecdotes historiques ou mythologiques, si centraux dans l'histoire naturelle au XVI^e siècle, tendent à en être de plus en plus écartés au XVIII^e, ils demeurent encore très présents, y compris chez un auteur comme Buffon. Ces incertitudes s'expliquent en partie par le fait qu'hormis la botanique, assez bien représentée dans les universités ou d'autres institutions scientifiques depuis la fin de la Renaissance, l'histoire naturelle en tant que telle reste encore assez peu institutionnalisée, même si sa situation change significativement à cet égard dans les dernières décennies du siècle. Elle suscite en revanche un très grand engouement dans des milieux sociaux divers, impliquant des acteurs aussi bien professionnels (médecins, universitaires, membres pensionnés de sociétés savantes ...) qu'amateurs, sans que la frontière entre ces deux catégories soit

4 Sur l'histoire naturelle des Lumières en général, voir notamment Mornet D., *Les Sciences de la nature en France, au XVIII^e siècle. Un chapitre de l'histoire des idées* (Paris : 1911) ; Gillispie C.C., *Science and Polity in France at the End of the Old Regime* (Princeton : 1980) ; Ehrard J., *L'Idée de nature en France dans la première moitié du XVIII^e siècle* (Paris : 1994) ; Jardine N. – Secord J.A. – Spary E.C. (éds.), *Cultures of Natural History* (Cambridge : 1996) ; Spary E.C., "The 'Nature' of Enlightenment", in Clark W. – Golinski J. – Schaffer S. (éds.), *The Sciences in Enlightened Europe* (Chicago : 1999) 272-304 ; Spary E., *Utopia's Garden : French Natural History from Old Regime to Revolution* (Chicago : 2000).

d'ailleurs clairement définie. Corrélativement, elle donne lieu à une activité éditoriale considérable destinée à des publics variés, savants ou non.

Cette histoire naturelle des Lumières, foisonnante et au statut complexe, produit un nombre considérable de recherches, d'observations, de collectes d'échantillons sur tous les continents, au point que les connaissances positives explosent littéralement. Pourtant elle n'en continue pas moins à faire appel à des données recueillies une vingtaine de siècles auparavant. C'est là un aspect relativement méconnu de l'histoire des sciences des Lumières que ce recours abondant à une documentation très ancienne. Certes, on sait que des savants tels que Buffon présentent volontiers Pline ou Aristote comme leurs modèles – des modèles qu'ils instrumentalisent d'ailleurs, au besoin, pour promouvoir leurs propres approches –, qu'ils leur empruntent quelquefois des idées générales, qu'ils en imitent des traits stylistiques ou méthodologiques⁵ ; cependant on s'attend moins à trouver chez eux un intérêt si fort, et même une certaine dépendance à l'égard de ces sources d'informations. Nous donnerons ici deux illustrations de cette intégration du savoir ancien dans la science moderne : en premier lieu, nous évoquerons la parution dans la seconde moitié du XVIII^e siècle de plusieurs éditions d'ouvrages anciens destinées avant tout aux naturalistes contemporains ; et en second lieu, nous évaluerons le poids quantitatif et qualitatif des données anciennes dans l'*Histoire naturelle* de Buffon et de ses collaborateurs.

1 Les éditions d'auteurs anciens et leur intégration dans le corpus naturaliste des Lumières

L'histoire éditoriale des textes naturalistes anciens constitue un excellent indicateur de l'attitude des savants envers le savoir antique, et plus généralement des tendances de la science de chaque époque. À cet égard, le cas de la *Naturalis historia* de Pline est particulièrement éloquent⁶. Ainsi, cet ouvrage connaît

5 Voir le "Premier Discours. De la manière d'étudier et de traiter l'histoire naturelle", in Buffon, *Histoire naturelle* vol. 1, 1-62. Pour un examen très approfondi des rapports entre Buffon, Aristote et Pline, voir notamment Paradis S., *Imagination, jugement, génie : la fabrique des quadrupèdes dans l'Histoire naturelle de Buffon* (thèse de doctorat de l'Université Laval, Québec : 2008), chapitres 5 ("Buffon lecteur d'Aristote") et 6 ("Buffon lecteur de Pline l'Ancien").

6 Nous avons consacré à ce sujet une étude plus spécifique dont nous reprenons ici certains éléments : voir Loveland J. – Schmitt S., "Poinsinet's Edition of the *Naturalis Historia* (1771-1782) and the Revival of Pliny in the Sciences of the Enlightenment", *Annals of Science* 72, 1 (2015) 2-27.

durant toute la Renaissance un succès considérable dont témoignent les dizaines d'éditions publiées à partir de l'édition *princeps* de 1469, en latin et dans la plupart des langues d'Europe occidentale⁷. Tout au long de cette période, les débats sont nombreux autour des 'erreurs' de Pline, des qualités respectives de son œuvre et de ses sources grecques (Théophraste ...), ou des meilleures méthodes d'établissement et de correction du texte, mais toutes ces discussions demeurent très étroitement liées à l'histoire naturelle contemporaine⁸. Aussi, de même que les 'naturalistes' de cette époque, tels Gessner et Aldrovandi, recourent très massivement à Pline dans leurs entreprises encyclopédiques, de même les éditions de la *Naturalis historia* ne font aucune distinction entre ce que nous appellerions aujourd'hui 'science' et 'érudition'. De manière significative, par exemple, le médecin français Jacques Daléchamps publie presque simultanément en 1586-1587 un traité de botanique et une nouvelle édition annotée du texte plinien, les deux ouvrages profitant mutuellement l'un de l'autre, notamment pour l'identification des espèces végétales⁹. De même, la traduction espagnole de Jerónimo Gómez de Huerta parue à partir de 1624 intègre un grand nombre de données supplémentaires empruntées aux auteurs anciens et modernes, y compris des illustrations d'animaux du Nouveau Monde¹⁰. Ainsi, jusqu'aux premières décennies du XVII^e siècle, le nombre et la nature des éditions de Pline révèlent l'absence de séparation, dans l'esprit des savants, entre les savoirs naturalistes ancien et moderne, et même s'il fait l'objet d'une importante et complexe réflexion critique, le premier demeure intimement incorporé au second.

Cependant, on peut repérer un changement sensible dans la première moitié du XVII^e siècle. En effet, contrastant avec la profusion de l'époque

7 Voir Gudger E.W., "Pliny's *Historia naturalis*: the Most Popular Natural History ever Published", *Isis* 6.3 (1924) 269-281; Labarre A., "Diffusion de l'*Historia naturalis* de Pline au temps de la Renaissance", in Geck E. – Pressler G. (éds.), *Festschrift für Claus Nissen* (Wiesbaden : 1973) 451-469; Nauert C.G., "Caius Plinius Secundus", in Cranz F.E. (éd.), *Catalogus translationum et commentariorum: Mediaeval and Renaissance Latin Translations and Commentaries* (Washington, DC: 1980) vol. 4, 297-342. Sur la seule traduction française de la Renaissance, voir Tomlinson R.C., "Plusieurs choses qu'il n'avait veuës": Antoine Du Pinet's translation of Pliny the Elder (1562)", *Translation and Literature* 21, 2 (2012) 145-161.

8 Pour un bilan récent des travaux sur le statut de Pline à la Renaissance, voir Perifano A. (éd.), *Pline l'Ancien à la Renaissance*, in *Archives internationales d'histoire des sciences* 61, 166-167 (2011) 3-453.

9 Daléchamps Jacques, *Historia generalis plantarum*, 2 vols. (Lyon : Guillaume Rouille, 1586-1587) ; Pline l'Ancien, *Historiae mundi libri XXXVII*, éd. Jacques Daléchamps (Lyon, Barthélemy Honorat : 1587).

10 Pline l'Ancien, *Historia natural de Cayo Plinio Segundo: Traducida por el licenciado Geronimo de Huerta*, 4 vols. (Madrid, Juan González : 1624-1629).

précédente, les éditions de la *Naturalis historia* se font brutalement beaucoup plus rares : si l'on considère uniquement les éditions complètes, il n'en paraît que quatre en latin, et aucune traduction, entre 1640 et 1760¹¹. Il s'agit là de la période la plus pauvre de toute l'histoire éditoriale de Pline, et ce déclin quantitatif s'accompagne d'un sensible changement de statut du texte plinien, car les quatre éditions en question, accomplies par deux érudits sans compétence particulière en histoire naturelle, visent avant tout à l'exactitude philologique et cherchent à l'éclairer sans le mettre pour autant en rapport avec le savoir moderne. Ainsi, les notes de commentaire ne font que très ponctuellement appel à l'actualité scientifique, les éditeurs se contentant généralement d'emprunter à ce sujet les informations données par leurs devanciers du XVI^e siècle.

Cette évolution paraît traduire une séparation progressive du savoir naturaliste ancien, représenté ici par Pline, et de la nouvelle conception de la science à l'époque moderne. Le dialogue, encore très actif à la fin de la Renaissance, semble n'avoir pas résisté aux vastes bouleversements de la pensée occidentale que l'on désigne, à tort ou à raison, comme la 'révolution scientifique'. Ainsi, au début du XVIII^e siècle la *Naturalis historia* pourrait apparaître comme un ouvrage d'intérêt principalement documentaire (ou éventuellement littéraire), utile à ceux qui étudient la civilisation romaine plutôt qu'aux médecins ou aux naturalistes, et au statut assez semblable, en définitive, à celui qu'il possède actuellement. Ce type d'attente à l'égard du texte plinien se retrouve du reste dans plusieurs éditions de la fin du XVIII^e siècle¹² et annonce les grandes éditions des philologues de la seconde moitié du XIX^e siècle, Julius Sillig, Detlef Detlefsen et Carl Mayhoff, sur lesquelles reposent essentiellement les éditions de référence actuelles.

Cependant, cette tendance générale, qu'on pourrait croire continue et inexorable depuis la fin de la Renaissance jusqu'à la période contemporaine, connaît un arrêt, et même une inversion à partir du milieu du XVIII^e siècle. On constate alors un net regain d'intérêt de la part des naturalistes pour les données anciennes en général et celles de Pline en particulier. Ce renouveau se manifeste notamment dans plusieurs éditions entreprises à cette époque et destinées prioritairement à un public de naturalistes, professionnels ou amateurs. Par exemple, le savant néerlandais Laurentius Theodorus Gronovius,

11 Ces quatre éditions sont celle de Johann Friedrich Gronovius, 3 vols. (Leyde, Johannes Hackius : 1669) et les trois de Jean Hardouin : 5 vols. (Paris, François Muguet : 1685), 3 vols. (Paris, Antoine-Urbain Coustelier : 1723) et 3 vols. (Paris, Impensis Societatis [Jesu] : 1741). L'édition de 1741 n'est qu'une réimpression de celle de 1723.

12 Notamment celles de Johann Peter Miller, en 5 vols. (Berlin, Ambrosius Haude and Johannes Carl Spener : 1766) et de Gabriel Brotier en 6 vols. (Paris, Jean-Joseph Barbou : 1779).

connu par ailleurs pour ses travaux d'ichtyologie, publie en 1778 une édition du livre IX de la *Naturalis historia*, précisément consacré aux animaux aquatiques¹³. Outre les éléments philologiques, le commentaire signale les concordances anciennes (chez Aristote surtout), mais indique aussi les noms des espèces dans la nomenclature moderne, faisant appel pour cela à des traités récents, de Linné ou du naturaliste Mathurin-Jacques Brisson par exemple. Quant à la traduction allemande parue en 1764, si elle comporte un appareil extrêmement réduit, elle est explicitement destinée aux naturalistes contemporains. Le traducteur, Johann Daniel Denso, est convaincu de l'utilité de ce texte pour ces derniers, et projette même de publier des suppléments pour mettre à jour, en quelque sorte, la *Naturalis historia* ; un projet resté, il est vrai, lettre morte¹⁴.

Si le phénomène est européen, c'est en France qu'est publiée la plus remarquable de ces éditions de Pline s'adressant prioritairement aux naturalistes. Bilingue, française et latine, elle paraît en douze volumes par les soins de Louis Poinsinet de Sivry entre 1771 et 1782¹⁵. Un très riche appareil de notes de bas de page et de suppléments placés à la fin des différents volumes y entretient un dialogue constant entre le texte plinien et la science contemporaine. *L'Histoire naturelle* de Buffon, par exemple, est abondamment citée dans les notes de la partie zoologique. Les données retenues par le 'Pline français' sont sans cesse confrontées à celles du Pline véritable, et la comparaison ne tourne pas nécessairement à l'avantage du Moderne. Ainsi, lorsque Pline, suivant Aristote, affirme que 'la lionne fait cinq petits la première fois ; qu'ensuite elle en fait un de moins d'année en année, jusqu'à ce qu'elle n'en fasse qu'un seul', le commentateur, sans prendre parti, se contente de relever que 'M. de Buffon contredit cette assertion [et] se croit fondé à soutenir que la première et la seconde portée sont les moins nombreuses ; et qu'au contraire les portées les plus nombreuses sont les intermédiaires¹⁶'.

13 Pline l'Ancien, *Historiae naturalis liber nonus de aquatiliu natura*, éd. Laurentius Theodorus Gronovius (Leyde, Theodorus Haak et Samuel et Johannes : 1778). Il s'agit de l'arrière-petit-fils de l'érudit qui édita la *Naturalis historia* en 1669.

14 Denso Johann Daniel, "Vorrede", in *Plinius Naturgeschichte, übersetzt von Johann Daniel Denso*, 2 vols. (Rostock et Greifswald, Anton Ferdinand Rosen : 1764) vol. 1, fol. [***1r-v].

15 Pline l'Ancien, *Histoire naturelle de Pline, traduite en françois, avec le texte latin rétabli d'après les meilleures leçons manuscrites ; accompagnée de notes critiques pour l'éclaircissement du texte, et d'observations sur les connoissances des Anciens comparées avec les découvertes des Modernes*, éd. Louis Poinsinet, 12 vols. (Paris, Veuve Desaint : 1771-1782). Sur l'histoire complexe et les enjeux de cette édition, voir Loveland – Schmitt, "Poinsinet's Edition of the *Naturalis Historia*".

16 Pline l'Ancien, *Histoire naturelle de Pline* vol. 3, 346-347.

D'une manière générale, les informations fournies par Pline sont prises au sérieux. À propos du passage sur la capture des petits du tigre, dont nous avons vu qu'il est repris par Buffon et l'*Encyclopédie*, Poinsinet mentionne un témoignage récent attestant de pratiques différentes, mais il ajoute : 'Cependant il faut bien qu'autrefois l'usage ait été d'enlever les petits tigres de la manière dont Pline l'expose ici, puisqu'il n'est pas le seul des Anciens qui en fasse mention', et il cite quelques vers de Martial décrivant une méthode équivalente¹⁷. Même si, comme l'Encyclopédiste, Poinsinet suggère que ce mode de capture n'est plus pratiqué de son temps et n'a donc pas d'intérêt technique direct, cet exemple donne une idée du seuil de crédibilité à partir duquel il considère qu'une donnée peut être admise comme fiable ; or ce seuil, on le voit, autorise *a priori* l'exploitation scientifique d'une très grande partie du corpus plinien.

Poinsinet exonère Pline des accusations d'erreur et de crédulité devenues communes depuis la Renaissance. Il faut en effet, dit-il,

distinguer ce qu'il rapporte par curiosité seulement, et comme pure singularité, des faits qu'il avoit pu vérifier, ou qui passaient pour constants : c'est ce qu'on démêle sans peine, quand on s'est rendu Pline un peu familier¹⁸.

Mieux encore, des faits rapportés par le naturaliste romain et qui autrefois paraissaient merveilleux, se sont vus confirmés par des observations récentes, tels les coquillages luminescents dont Réaumur a pu constater les propriétés au début du XVIII^e siècle. Quant à toute la partie sur les remèdes tirés des plantes, Poinsinet engage à y retrouver des médicaments simples et à portée de tous, plus commodes assurément que les dangereuses sophistications de la médecine moderne. Il ne fait d'ailleurs en cela que reprendre l'argument que Pline lui-même invoquait contre les excès de la médecine grecque de son temps.

L'attitude de Poinsinet à l'égard de la *Naturalis historia* n'est donc pas, sur ce point en tout cas, radicalement différente de celle des éditeurs de la Renaissance. Sans s'interdire d'adopter une certaine distance critique envers les données de Pline, il les conçoit comme faisant partie du savoir naturaliste de son temps, quitte à les corriger ou à les compléter au besoin à l'aide de la littérature récente. Il n'est pas le seul à procéder ainsi. Dans son édition bilingue des textes zoologiques de Pline, Pierre-Claude-Bernard Guérout reprend le même argumentaire que Poinsinet au sujet de la fiabilité et de la qualité des

17 Pline l'Ancien, *Histoire naturelle de Pline* vol. 3, 364.

18 Pline l'Ancien, *Histoire naturelle de Pline* vol. 1, vii.

informations¹⁹. Lui aussi recourt massivement dans ses notes à des ouvrages récents comme l'*Histoire naturelle* de Buffon (y compris les derniers volumes publiés par Lacepède) ainsi qu'aux travaux de Cuvier. Il insère même quelques données inédites, recueillies par exemple à la ménagerie du Muséum National d'Histoire naturelle, pour illustrer ou compléter certains passages de Pline²⁰.

Ce type d'éditions de textes anciens, privilégiant un dialogue avec la zoologie contemporaine, ne se limite pas au cas de Pline. Il est significatif qu'à la même époque, paraît la première traduction française de l'*Histoire des animaux* d'Aristote par Armand-Gaston Camus. Ce dernier souligne l'intérêt des données anciennes pour les naturalistes modernes, et tout en admettant que dans certains domaines les connaissances de son temps dépassent celles de l'Antiquité, il estime que dans d'autres, comme l'ornithologie et l'ichtyologie, Aristote en savait autant que les Modernes, voire davantage²¹. Au reste, ajoute-t-il,

quand même tous les Animaux qui ont été observés par les Anciens, l'auroient été également par les Modernes ; quand ceux-ci auroient étudié avec le même soin, la forme, la nature, le caractere de tous les êtres vivans, seroit-il donc sans agrément ou sans utilité, de comparer l'état de ces êtres vivans à deux époques séparées l'une de l'autre par un espace de vingt et un siecle ? N'y a-t-il pas eu des especes de transmigrations chez les Animaux comme chez les hommes ? Telles especes ne sont-elles pas devenues communes dans des contrées où jadis elles n'existoient pas ; et telles autres n'ont-elles pas déserté les lieux qu'elles fréquentoient ? Les effets de la population humaine, de la culture des terres, du dessechement des marais, en un mot, de cette inquiétude de l'homme qui tourmente sans cesse la surface du globe, n'ont-ils pas influé jusques sur les bêtes ? Voilà des objets intéressans à connoître, et l'on ne peut y parvenir que par la comparaison des ouvrages des Anciens et des Modernes.

Ainsi, non seulement le savoir naturaliste ancien intéresse en soi la science moderne, mais sa comparaison avec le savoir actuel est source de connaissance. En cela Camus traduit une tendance de l'histoire naturelle de son temps, illustrée par exemple par les *Époques de la Nature* de Buffon, et consistant à

19 Pline l'Ancien, *Histoire naturelle des animaux par Pline. Traduction nouvelle, avec le texte en regard, par P.-C.-B. Guérault*, 3 vols. (Paris, Delance et Lesueur : 1802) vol. 1, vii-xiii.

20 Pline l'Ancien, *Histoire naturelle des animaux par Pline* vol. 1, 456-457.

21 Aristote, *Histoire des animaux d'Aristote, avec la traduction française, par M. Camus*, 2 vols. (Paris, Veuve Desaint : 1783) vol. 2, xxxii-xxxiv.

replacer la nature, sinon dans une histoire, du moins dans une certaine temporalité. Dans cette perspective, les données transmises par Aristote ou par Pline, non seulement conservent leur validité, mais acquièrent une importance inédite en lien avec l'actualité scientifique.

Il convient de noter que ce type d'intérêt pour les données des Anciens ne relève pas de ce que nous appellerions aujourd'hui l'histoire des sciences, un domaine qui ne fait d'ailleurs qu'émerger à fin du XVIII^e siècle chez certains savants convaincus de l'intérêt qu'il y a pour eux à connaître la marche des connaissances depuis l'Antiquité. De fait, Camus ne méconnaît pas cette dimension :

il n'est pas moins utile au progrès des sciences, écrit-il, que satisfaisant pour l'homme de lettres, de considérer comment une même matière a été traitée dans des âges fort distans l'un de l'autre.

Mais il distingue clairement cet argument de ceux qui précèdent et qui portent bien, eux, sur l'utilité scientifique *immédiate* du savoir aristotélicien.

Ces éditions de textes naturalistes anciens parues à l'époque des Lumières et conçues comme faisant partie du corpus d'histoire naturelle à la disposition des savants et amateurs participent pleinement au réseau intertextuel qui caractérise ce domaine. Par exemple, dans son édition des livres zoologiques de Pline, Guérout proclame qu'il s'est servi non seulement d'ouvrages modernes tels que ceux de Buffon et Lacepède, comme nous l'avons vu, mais aussi des 'notes instructives' de Camus dans son édition d'Aristote²². Inversement, les auteurs d'ouvrages modernes d'histoire naturelle ne dédaignent pas de discuter parfois ces commentaires. On voit ainsi s'établir une sorte de dialogue entre l'ouvrage de Buffon et l'édition de Pline par Poinsinet de Sivry : ce dernier ayant, dans ses notes, reproché au naturaliste français une erreur sur la forme des cornes du strepsicéros, sorte d'antilope décrite par Pline, le responsable d'une édition hollandaise de *l'Histoire naturelle*, Jean-Nicolas-Sébastien Allamand, démontre au contraire, dans une de ses 'Additions' au texte de Buffon, que la lecture de ce dernier est correcte et la traduction de Poinsinet fautive. Cette 'Addition' d'Allamand se trouve à son tour reproduite par Buffon dans un volume du *Supplément* de l'édition de Paris paru ultérieurement²³.

La publication de ce type d'éditions de Pline ou d'Aristote, à partir du milieu du XVIII^e siècle et jusqu'au début du siècle suivant, constitue donc un phénomène tout à fait significatif, d'autant plus remarquable qu'il suit une époque

22 *Histoire naturelle des animaux par Pline* vol. 1, xiii.

23 Buffon Georges-Louis Leclerc de, *Histoire naturelle. Supplément* 6, 127.

de pauvreté éditoriale (en tout cas en ce qui concerne Pline) et qu'il précède la grande 'vague philologique' du XIX^e siècle. Il concerne aussi d'autres savants grecs ou latins²⁴. La nature même de ces éditions, les éléments paratextuels qu'elles renferment et l'utilisation qui en est faite dans la littérature scientifique contemporaine contribuent à maintenir le lien entre le savoir naturaliste ancien et la science moderne. Elles répondent à une certaine attente de la part des savants et des amateurs, et, en retour, facilitent l'emprunt de données anciennes.

2 La présence des données anciennes dans l'*Histoire naturelle* de Buffon

L'*Histoire naturelle* de Buffon, tout en se présentant comme une entreprise novatrice à de nombreux égards, fait massivement appel à du matériel emprunté à la littérature antérieure. Cette dimension compilatoire (qui se retrouve dans l'*Encyclopédie*) est même parfaitement assumée, puisque le prospectus paru en 1747 annonce que 'l'histoire particulière des animaux quadrupèdes [sera] tirée des Auteurs d'Histoire Naturelle et d'un grand nombre de Voyageurs, d'Auteurs de Traités d'économie rustique, de chasse, etc²⁵'. Or, dans cet ensemble composé de plusieurs centaines de sources, directes ou indirectes²⁶, les ouvrages anciens occupent une place substantielle. Environ cent cinquante auteurs de l'Antiquité grecque et latine sont ainsi mentionnés au moins une fois par Buffon ou par l'un de ses collaborateurs officiels (Daubenton, Guéneau de Montbeillard et Lacepède). Ce chiffre recouvre une très grande disparité de cas, notamment sur un plan quantitatif, puisque seuls vingt-sept de ces auteurs sont cités plus de dix fois et cinq plus de cinquante fois (Aristote, Athénée, Élien, Oppien et Pline) ; Pline et Aristote, auteurs des deux principaux corpus zoologiques de l'Antiquité, dominant en outre très largement, avec plusieurs centaines de références pour chacun d'eux. Mais une telle valeur indique bien

24 Signalons par exemple l'édition bilingue (grecque et anglaise) du *Traité des pierres* de Théophraste, réalisée dans le même esprit par le naturaliste John Hill (v. 1715-1775), *History of Stones. With an English Version, and Critical and Philosophical Notes* (Londres, sans nom d'imprimeur, For C. Davis : 1746), dont l'appareil critique est repris dans une traduction française : *Traité des pierres de Théophraste traduit du Grec ; avec des Notes physiques et critiques, traduites de l'Anglois de M. Hill* (Paris, Jean-Thomas Hérissant : 1754).

25 Ce prospectus est reproduit en annexe au vol. 1 de l'édition en cours chez Honoré Champion (voir note 1).

26 Un relevé systématique des sources citées dans les 44 volumes de l'*Histoire naturelle* (y compris les huit volumes publiés par Lacepède) donne un chiffre d'environ 1600 titres. Ces 44 volumes constituent le corpus de référence dans la suite de ce chapitre.

tout de même une présence significative et variée de l'héritage antique dans *l'Histoire naturelle*.

Il est vrai que Buffon et ses collaborateurs consultent une grande partie de ces sources anciennes de manière indirecte, c'est-à-dire dans des ouvrages modernes qui eux-mêmes les citent²⁷. À cet égard, ce sont les naturalistes compilateurs de la Renaissance, et en premier lieu Conrad Gessner et Ulisse Aldrovandi, qui constituent les principaux pourvoyeurs de références anciennes puisque, ces auteurs ayant déjà eux-mêmes effectué un travail pratiquement exhaustif sur les sources antérieures à eux, leurs ouvrages représentent en quelque sorte une immense base de données zoologiques. Certes, Buffon porte un jugement rigoureux sur la méthode d'Aldrovandi, et il lui reproche notamment son excès d'érudition et son manque de discernement ; mais il est forcé de reconnaître que l'organisation de ses ouvrages les rend particulièrement commodes à consulter²⁸.

Ainsi, une majorité des cent cinquante auteurs ou ouvrages antiques cités ou mentionnés dans *l'Histoire naturelle* le sont au travers du prisme de l'histoire naturelle encyclopédique de la seconde moitié du XVI^e siècle. Néanmoins il existe des exceptions à cette règle générale de consultation indirecte. En premier lieu, certains auteurs peuvent se trouver consultés directement (c'est-à-dire dans une édition du texte original ou une traduction qui peut être précisée ou identifiable) en une ou quelques occasions. C'est le cas notamment quand il s'agit d'un argument particulièrement important ou d'une discussion détaillée : par exemple, lorsque Buffon expose les idées d'Hippocrate à propos de la théorie de la génération, celui-ci est alors cité dans la traduction d'Anuce Foës et d'après une édition du XVI^e siècle²⁹. Mais pour les emprunts de données ponctuelles, ces cas sont rares. En revanche, deux auteurs constituent une exception beaucoup plus remarquable dans la mesure où, à l'inverse des précédents, ils sont presque toujours consultés directement, et exceptionnellement d'après une source intermédiaire : ce sont Aristote et Pline, c'est-à-dire précisément les deux auteurs anciens les plus représentés quantitativement dans

27 On peut s'en rendre compte, soit parce que les auteurs le précisent eux-mêmes (ce qui est assez fréquent), soit parce que divers indices le révèlent avec plus ou moins de certitude : par exemple, quand on retrouve une succession identique de références anciennes dans un ouvrage moderne paru avant *l'Histoire naturelle*, ou en cas de similitudes de traduction ou de particularités du texte inexplicables par le hasard.

28 Buffon, *Histoire naturelle, générale et particulière* vol. 1, 26-28.

29 Hippocrate, *Opera omnia. Graece et Latine edita, et ad omnes alias editiones accommodata. Industria et diligentia Joannis Antonidae Vander Linden*, 2 vols. (Leyde, Daniel, Abraham et Adriaan van Gaasbeeck : 1665). Compte tenu des indications données par Buffon et du choix des citations (voir notamment Buffon, *Histoire naturelle* vol. 2, 93-97), l'hypothèse d'un emprunt à une source intermédiaire est hautement improbable.

l'Histoire naturelle. Dans les deux cas, la très grande majorité des références, qu'il s'agisse de données de détail ou de renvois plus généraux, ne proviennent ni de Gessner, ni d'Aldrovandi, mais résultent selon toute vraisemblance d'un travail de 'dépouillement' effectué sur le texte même³⁰. Aristote est presque toujours cité dans la traduction de Théodore Gaza (d'après une édition non identifiée), et Pline d'après diverses éditions, non toujours identifiables mais parfois précisées³¹.

Ainsi, les auteurs de *l'Histoire naturelle* ont adopté une double stratégie dans la mobilisation des données antiques. Pour la majorité des auteurs, ils ont profité de recueils déjà existants, dans lesquels ils ont pu puiser aisément des informations dûment rassemblées et classées. Cela les distingue, certes, des naturalistes encyclopédistes de la Renaissance qui, eux, ne pouvaient évidemment pas bénéficier d'un tel précédent et consultaient donc beaucoup plus fréquemment les textes-sources eux-mêmes. Mais ce n'est pas là une différence fondamentale, car à toutes les époques, les compilateurs ont eu tendance à recourir prioritairement à des compilations antérieures à eux quand elles existaient, quitte à les compléter au besoin³². En revanche, il est remarquable que dans le cas d'Aristote et de Pline, ce soit la consultation directe qui ait été très majoritairement privilégiée. Les données zoologiques fournies par ces deux auteurs, au même titre que celles de tous les autres ouvrages anciens, avaient été compilées par Aldrovandi et Gessner, en sorte que Buffon et ses collaborateurs auraient pu aussi bien les consulter chez eux ; or, ils ont préféré les lire directement, signifiant par là leur rapport particulier à ces deux savants.

Ce point est à mettre en corrélation avec l'attention scrupuleuse qu'ils ont souvent portée à l'analyse textuelle de ces deux sources, s'intéressant de près aux questions d'établissement du texte et de traduction, en particulier à propos de la nomenclature zoologique. C'est que, écrit Buffon au sujet de l'identification de l'élan et du renne,

30 Ce terme de 'dépouillement' est employé par Buffon lui-même, lorsqu'il parle du travail de recueil des données qu'il a effectué sur les ouvrages de voyageurs : voir Nadault de Buffon, Henri (éd.), *Correspondance générale*, 2 vols. (Genève : 1971) vol.1, 373-374.

31 Il est fait explicitement référence à plusieurs éditions précises de Pline dans *l'Histoire naturelle*, mais il est probable que Buffon et ses collaborateurs ont surtout utilisé celle de Hardouin (Paris, François Muguet : 1685), qui est mentionnée par exemple dans *l'Histoire naturelle, générale et particulière* vol. 2, 526, ou l'une de ses rééditions.

32 Ce qu'on peut reconstituer du travail de Pline lui-même révèle qu'il exploitait sur chaque sujet un petit nombre de sources privilégiées, y ajoutant ponctuellement des données issues d'autres sources ou éventuellement de ses observations personnelles. À ce sujet, voir notamment Sallmann K.G., *Die Geographie des älteren Plinius in ihrem Verhältnis zu Varro* (Berlin : 1971) ; Naas V., *Le Projet encyclopédique de Pline l'Ancien* (Rome : 2002) 107-170.

les commentateurs de Pline, quoique très-savans et très-érudits, étoient très-peu versés dans l'histoire naturelle, et c'est par cette raison qu'on trouve dans cet Auteur tant de passages obscurs et mal interprétés. Il en est de même des traducteurs et des commentateurs d'Aristote ; nous tâcherons à mesure que l'occasion s'en présentera de rétablir le vrai sens de plusieurs mots altérés et de passages corrompus dans ces deux Auteurs³³.

À d'autres moments, c'est la traduction du grec au latin qui pose problème, et il faut alors effectuer un véritable travail critique, en remontant au texte original et en confrontant éventuellement plusieurs sources. Par exemple, sur la question de la différence entre le chameau et le dromadaire, Buffon remarque :

Théodore Gaza, dont j'ai toujours emprunté la traduction, lorsque j'ai cité dans cet ouvrage quelques passages d'Aristote, paroît avoir rendu celui-ci d'une manière ambiguë ; *alteris enim bina, alteris singula tubera habentur*, signifie seulement que les uns ont deux, et que les autres n'ont qu'une bosse, tandis que le texte Grec indique précisément que ce sont les Chameaux d'Arabie, qui n'ont qu'une bosse, et que ceux de la Bactriane en ont deux. Aussi Pline, qui sur l'article du Chameau, comme sur beaucoup d'autres, n'a fait, pour ainsi dire, que copier Aristote, a mieux traduit ce passage que Gaza, en disant, *Cameli Bactriani et Arabici differunt, quod illi bina habent tubera in dorso, hi singula*³⁴.

On trouve ainsi dans l'*Histoire naturelle* un certain nombre d'analyses détaillées des textes d'Aristote et de Pline (plus rarement d'autres Anciens), qui relèverait, aujourd'hui, plus de la science philologique que de la science de la nature. On le voit par exemple lorsque Buffon et ses collègues tentent de démêler les différentes espèces et variétés animales en confrontant les différentes sources disponibles entre elles et avec leurs propres observations. Cet aspect joue, de fait, un rôle majeur dans le programme de recherche buffonien, où la question de la définition de l'espèce, de ses possibles variations et de ses limites est absolument centrale³⁵. On comprend dès lors la recommandation exprimée par Guéneau de Montbeillard sur la méthode à suivre dans l'étude des animaux :

33 Buffon, *Histoire naturelle, générale et particulière* vol. 12, 81-82 ; voir aussi page 87.

34 Buffon, *Histoire naturelle, générale et particulière* vol. 11, 213.

35 Sur la question de l'espèce chez Buffon, voir notamment Lovejoy A.O., "Buffon and the Problem of Species", in Glass B. – Temkin O. – Strauss W.L. (éds.), *Forerunners of Darwin : 1745-1859* (Baltimore : 1959) 84-113 ; Roger J., *Buffon. Un philosophe au Jardin du Roi* (Paris : 1989) chap. 19 ; Farber P.L., "Buffon and the Concept of Species", *Journal of the History of Biology* 5 (1972) 259-284 ; Sloan P.R., "The Idea of Racial Degeneracy in Buffon's *Histoire*

La première chose que l'on doit se proposer lorsqu'on entreprend d'éclaircir l'histoire d'un animal, c'est de faire une critique sévère de sa nomenclature, de démêler exactement les différens noms qui lui ont été donnés dans toutes les langues et dans tous les temps, et de distinguer autant qu'il est possible, les espèces différentes auxquelles les mêmes noms ont été appliqués ; c'est le seul moyen de tirer parti des connoissances des Anciens, et de les lier utilement aux découvertes des Modernes, et par conséquent le seul moyen de faire de véritables progrès en Histoire Naturelle³⁶.

Le progrès de la science suppose donc l'établissement d'un rapport entre les découvertes récentes et le savoir ancien, c'est-à-dire l'entretien par le savant moderne d'une certaine intimité avec les textes de ses lointains prédécesseurs. Cette exigence conduit les auteurs de l'*Histoire naturelle* à adopter parfois des pratiques très proches de celle des naturalistes de la Renaissance, associant étroitement compilation, philologie et observations inédites.

Plus généralement, l'exploitation des données anciennes ne constitue pas une annexe documentaire à la science, mais fait bien partie de l'histoire naturelle proprement dite, dans la mesure où elle doit apporter des connaissances sur la nature et non sur la civilisation antique. C'est pourquoi Buffon n'hésite pas à reprocher à son collaborateur, l'abbé Gabriel Bexon, qui rédige pour lui un premier jet des articles de l'*Histoire naturelle des oiseaux*, sa tendance à abuser des références gratuites :

Il y a en général trop d'érudition, et vous ne voudriez pas qu'en comparant ces articles avec ceux qui sont imprimés, on voie qu'on a redoublé de science mythologique et d'érudition assez inutiles à l'*Histoire naturelle*. J'en retrancherai donc beaucoup et j'aurai l'honneur de vous envoyer dans peu le premier cahier corrigé de ma main ; cela vous servira d'exemple pour ceux de la suite³⁷.

naturelle", in Pagliaro H.E. (éd.), *Racism in the Eighteenth Century* (Londres – Cleveland : 1973) 293-321 ; Idem, "The Buffon-Linnaeus Controversy", *Isis* 67, 3 (1976) 356-375 ; idem, "Buffon, German Biology, and the Historical Interpretation of Biological Species", *British Journal for the History of Science* 12, 2 (1979) 109-153 ; Schmitt, S., "La Question de l'espèce, de sa constance et de ses variations chez Buffon et ses contemporains", in Buffon, *Œuvres complètes* vol. 5, 12-68.

36 Buffon, *Histoire naturelle des oiseaux* vol. 2, 1-2.

37 Buffon, *Correspondance générale* vol. 1, 346-347.

Pour Buffon, si, de temps à autre, la dimension esthétique d'une citation n'est pas à négliger³⁸, l'érudition inutile, caractéristique d'auteurs tels qu'Aldrovandi, est clairement rejetée du champ de l'histoire naturelle³⁹.

D'ailleurs, si l'on considère dans le détail la nature des données factuelles empruntées aux Anciens, directement ou indirectement, on constate qu'elles couvrent à peu près tous les thèmes traités dans l'*Histoire naturelle*. On peut les répartir en deux groupes. Les premières sont, par leur nature même, liées au monde ancien, c'est-à-dire accessibles uniquement à travers une source ancienne : c'est le cas, par exemple, des références à certains événements particuliers survenus au cours de l'Antiquité (comme des phénomènes géologiques, sismiques ou volcaniques tels que la formation d'îles nouvelles), ou à des données linguistiques liées à la nomenclature des espèces par les Anciens, ou encore à certains usages (culinaires, techniques, religieux ...) sans équivalents à l'époque de Buffon. Dans ce cas, le recours aux sources anciennes est évidemment indispensable. En revanche, la seconde catégorie de données recouvre des informations non spécifiquement liées à l'Antiquité, mais *a priori* disponibles à toute époque : par exemple des observations morphologiques, anatomiques, biologiques ou comportementales sur des animaux. Ce sont là les emprunts, de loin, les plus nombreux. Qualitativement, la majorité de ces données ne jouent pas un rôle crucial dans les théories buffoniennes, mais il arrive que certaines aient une valeur très importante, comme les cas d'hybridation mentionnés par Aristote et invoqués par Buffon dans une discussion capitale sur la possibilité de variation des espèces⁴⁰. Il est d'autant plus remarquable que, pour recueillir de telles informations, Buffon et ses collègues aient choisi ou été contraints de faire appel à des textes antérieurs à eux de dix-sept ou vingt siècles.

Quantitativement, la place de ces données d'origine antique varie beaucoup d'un chapitre à l'autre de l'*Histoire naturelle*. Dans certains cas, comme les descriptions d'expériences inédites, ou d'animaux du Nouveau Monde, elles sont évidemment absentes. À l'inverse, elles peuvent atteindre une proportion considérable dans certains articles. Ainsi, dans le texte sur le paon, on peut calculer qu'environ 40 % du texte (notes comprises) correspond à des emprunts, directs ou indirects, mais en tout cas explicites, à des sources antiques⁴¹. Ce cas

38 Buffon déclare ainsi à propos d'un passage de Varron : 'Je ne puis résister au plaisir de traduire librement ce morceau, sans espérer d'en rendre toute la grâce' (*Histoire naturelle des oiseaux* vol. 9, 145).

39 Voir notamment Buffon, *Histoire naturelle, générale et particulière* vol. 1, 26-27.

40 Buffon, *Histoire naturelle, générale et particulière* vol. 14, 341.

41 Buffon et Guéneau de Montbeillard, *Histoire naturelle des oiseaux* vol. 2, 288-322. Cet article est signé de Buffon, mais celui-ci l'attribuera clairement à Guéneau par la suite. Sur

est certes particulier, dans la mesure où l'auteur de l'article lui-même avoue que les Anciens élevaient plus communément des paons que les Modernes (notamment à des fins culinaires) ; cependant, cet oiseau était loin d'être rare dans la France du XVIII^e siècle, et il est remarquable qu'une part importante de l'information le concernant ait été empruntée à Varron, Columelle ou Élien.

Les autres articles zoologiques (à l'exclusion des espèces inconnues des Anciens), sans atteindre généralement des valeurs aussi élevées, accordent cependant une place significative aux données anciennes clairement identifiées comme telles. Il faudrait en outre tenir compte de toutes les données rapportées à une source moderne (Gessner, Aldrovandi, voire un auteur plus récent), ou sans précision sur leur origine, et qui s'avèrent parfois provenir en dernière analyse d'une source antique : comme lorsque Buffon affirme, sans aucune référence, qu'un coup de tonnerre peut faire avorter les brebis, une observation qu'on retrouve chez Aristote et chez Pline⁴². Les cas de ce genre abondent dans l'*Histoire naturelle*. Les auteurs étaient sans doute conscients dans la plupart des cas de l'origine de ces données, mais pas toujours. Par exemple, Buffon dit avoir trouvé 'dans la relation du voyage autour du monde, de l'Amiral Drack', c'est-à-dire du navigateur anglais Francis Drake, une anecdote intéressante sur un peuple d'Afrique de l'Est consommateur de sauterelles :

cette mauvaise nourriture, poursuit Buffon, produit deux effets singuliers, le premier est qu'ils vivent à peine jusqu'à l'âge de quarante ans, et le second c'est que lorsqu'ils approchent de cet âge il s'engendre dans leur chair des insectes aîlez qui d'abord leur causent une demangeaison vive, et se multiplient en si grand nombre qu'en très-peu de temps toute leur chair en fourmille ; ils commencent par leur manger le ventre, ensuite la poitrine et les rongent jusqu'aux os, en sorte que tous ces hommes qui ne se nourrissent que d'insectes, sont à leur tour mangés par des insectes. Si ce fait étoit bien avéré, il fourniroit matière à d'amples réflexions⁴³.

De fait, cette curieuse métamorphose intéresse beaucoup Buffon parce qu'elle s'accorde parfaitement avec ses idées sur la génération et le cycle des molécules organiques. Or, c'est en réalité de Diodore de Sicile (III, 29) que proviennent

un total de 50076 signes, espaces compris, le total des parties de texte se rapportant explicitement à des sources antiques est de 20490 signes.

42 Buffon, *Histoire naturelle, générale et particulière* vol. 5, 11. L'information vient d'Aristote (*Histoire des animaux* IX 3, 610b) ou de Pline (*Histoire naturelle* VIII, 188).

43 Buffon, *Histoire naturelle, générale et particulière* vol 3, 451. Le passage auquel Buffon fait référence se trouve dans *Le Voyage curieux, fait autour du Monde, par François Drack, Admiral d'Angleterre* (Paris, Antoine Robinot : 1641) 94-96.

ces 'faits', ajoutés par quelque éditeur à la relation proprement dite du voyage de Drake.

Au reste, Buffon n'aurait sans doute pas pris plus de distance avec eux s'il s'était rendu compte de leur origine, car dans l'ensemble, le degré de confiance qu'il accorde aux auteurs anciens est bon, et en tout cas pas inférieur à celui qu'il concède, par exemple, aux voyageurs modernes. L'autorité d'Aristote, notamment, est très respectée, et les informations qui lui sont empruntées ne sont contestées que dans de rares cas, notamment lorsqu'elles entrent en contradiction avec des idées générales de Buffon. Par exemple, si les données fournies par le Stagirite au sujet du chameau sont globalement acceptées, des doutes sont émis sur un point précis, l'âge de maturité sexuelle, car la valeur indiquée par le naturaliste grec ne s'accorde pas avec la correspondance établie par Buffon entre la fin de la croissance des animaux et le début de leur capacité à engendrer⁴⁴. Mais en l'absence de tels enjeux, la confiance accordée à Aristote conduit souvent à admettre jusqu'à preuve du contraire des données même d'apparence douteuses, toujours susceptibles de se révéler vraies, au moins partiellement⁴⁵. Pline est un peu plus facilement mis en cause, car Buffon et ses collaborateurs sont conscients que le travail de compilation accompli par le naturaliste latin l'a parfois conduit à des erreurs, et ils déplorent son goût pour le merveilleux⁴⁶, un défaut également relevé chez d'autres auteurs anciens. Mais ces critiques demeurent assez exceptionnelles, et elles ne sont pas d'ailleurs propres aux ouvrages de l'Antiquité mais s'adressent aussi bien aux auteurs modernes, naturalistes ou voyageurs.

3 Conclusion

Ces deux exemples révèlent une présence encore considérable dans l'histoire naturelle de la seconde moitié du XVIII^e siècle, voire de la première moitié du XIX^e siècle, d'un savoir antique comprenant une multitude de données de détail sur les différents objets naturels, particulièrement les animaux. Le retour à l'Antiquité n'a certes rien de surprenant en soi : de manière à peu près constante, depuis la Renaissance, les sciences, comme les autres domaines de la culture, se sont nourries de l'héritage antique, y trouvant des idées générales, des principes philosophiques, des méthodes et même des modèles d'écriture.

44 Buffon, *Histoire naturelle, générale et particulière* vol. 11, 238.

45 Voir par exemple Buffon, *Histoire naturelle des oiseaux* vol 1, 113-115.

46 Voir Buffon, *Histoire naturelle, générale et particulière* vol. 12, 23 ; vol. 9, 279 ; *Histoire naturelle des oiseaux* vol. 1, 118, 450 ; vol. 5, 95 ; etc.

On sait que Buffon, par exemple, consacre plusieurs pages du texte introductif de l'*Histoire naturelle* à faire l'éloge d'Aristote et de Pline, et n'épargne rien pour souligner le parallèle entre son propre ouvrage et ceux de ces deux auteurs, les seuls auxquels il accepte de se mesurer véritablement, par-dessus les ouvrages d'histoire naturelle de son temps (spécialement ceux de Linné) ou de la Renaissance⁴⁷. Il vante surtout l'épistémologie et la méthode aristotéliennes, qui le portent à rechercher les rapports réels entre les choses plutôt qu'à accumuler les données sans choix ou à imaginer des classifications arbitraires, et il loue la qualité de la compilation, aussi bien de Pline que d'Aristote, qui permet à ces deux auteurs de faire ressortir le sens des faits qu'ils décrivent. Chez Pline, il relève

l'élévation des idées, la noblesse du style, [...] cette facilité de penser en grand qui multiplie la science, [...] cette finesse de réflexion de laquelle dépendent l'élégance et le goût, [...] une certaine liberté d'esprit, une hardiesse de penser qui est le germe de la Philosophie. Son ouvrage tout aussi varié que la Nature la peint toujours en beau, c'est, si l'on veut, une compilation de tout ce qui avoit été écrit avant lui, une copie de tout ce qui avoit été fait d'excellent et d'utile à sçavoir ; mais cette copie a de si grands traits, cette compilation contient des choses rassemblées d'une manière si neuve, qu'elle est préférable à la plûpart des ouvrages originaux qui traitent des mêmes matières.

Jusque dans le style, donc, Buffon cherche ses modèles dans l'Antiquité.

Ce qui est plus étonnant, en revanche, c'est de trouver chez lui, comme chez d'autres savants, à une période si tardive, un tel recours à des connaissances vieilles de deux millénaires, qu'on pourrait croire d'autant plus obsolètes que le siècle des Lumières a vu se déployer une activité de recherche extrêmement intense dans ces domaines. Il est vrai que l'attitude des naturalistes du XVIII^e siècle à l'égard d'auteurs comme Pline et d'Aristote se distingue sur bien des points de celle de Gessner ou d'Aldrovandi ; en particulier, ils ont conscience d'un progrès global des connaissances, illustré notamment par la découverte d'une multitude d'espèces nouvelles de plantes et d'animaux. Mais il n'empêche qu'ils partagent avec leurs prédécesseurs, non seulement des traits méthodologiques (particulièrement dans l'écriture compilatoire), mais aussi une certaine dépendance envers des corpus de données et de connaissances anciennes qui n'ont jamais véritablement été mises en causes avant le XIX^e siècle. C'est particulièrement le cas des informations sur la biologie (durée de vie,

47 Buffon, *Histoire naturelle, générale et particulière* vol. 1, 41-50.

de gestation, nombre de petits par portée, etc.) et le comportement des animaux. Or, si ces informations paraissent crédibles, et si aucune circonstance n'est venue les démentir, elles sont généralement admises sans difficulté. Bien sûr, tous les domaines de l'histoire naturelle ne sont pas concernés dans les mêmes proportions ; par exemple, l'on trouve dans les ouvrages botaniques de la fin du XVIII^e siècle beaucoup moins d'informations issues des traités de Théophraste, de Pline ou de Dioscoride, qu'on ne rencontre de données empruntées à Pline ou Aristote dans les ouvrages zoologiques. Il n'en demeure pas moins que la permanence significative d'un savoir factuel ancien jusqu'à l'orée de l'époque contemporaine constitue une caractéristique importante de l'histoire naturelle de cette période, dont l'historien doit tenir compte.

Bibliographie

- Buffon Georges-Louis Leclerc de, *Œuvres complètes*, éd. Schmitt S. – Crémère C., 9 vols. parus (Paris : 2007-).
- Buffon Georges-Louis Leclerc, Comte de – Daubenton Louis-Jean-Marie, *Histoire naturelle, générale et particulière*, 15 vols. (Paris, Imprimerie Royale : 1749-1767).
- Buffon Georges-Louis Leclerc, Comte de – Guéneau de Montbeillard, Philippe, *Histoire naturelle des oiseaux*, 9 vols. (Paris, Imprimerie Royale : 1770-1783).
- Buffon Georges-Louis Leclerc, Comte de, *Correspondance générale*, éd. H. Nadault de Buffon, 2 vols. (Genève : 1971).
- Buffon Georges-Louis Leclerc, Comte de, *Histoire naturelle des minéraux*, 5 vols. (Paris, Imprimerie Royale puis Imprimerie des Bâtiments du Roi : 1783-1788).
- Buffon Georges-Louis Leclerc, Comte de, *Histoire naturelle. Supplément*, 7 vols. (Paris, Imprimerie Royale : 1774-1789).
- Daléchamps Jacques, *Historia generalis plantarum* (Lyon, Guillaume Rouille : 1586-1587), 2 vols.
- Denso Johann Daniel, "Vorrede", in *Plinius Naturgeschichte, übersetzt von Johann Daniel Denso*, 2 vols. (Rostock – Greifswald, Anton Ferdinand Rosen : 1764), vol. 1, fol. *2r-[***iv].
- Diderot Denis – D'Alembert Jean le Rond (éds.), *Encyclopédie, ou Dictionnaire raisonné des sciences, des arts et des métiers, par une société de gens de lettres*, 17 vols. (Paris, Antoine-Claude Briasson – Michel-Antoine David l'Aîné – André-François Le Breton – Laurent Durand : 1751-1757, et Neuchâtel, Samuel Faulche : 1765).
- Drake Francis, *Le Voyage curieux, fait autour du Monde, par François Drach, Admiral d'Angleterre* (Paris, Antoine Robinot : 1641).
- Ehrard J., *L'Idee de nature en France dans la première moitié du XVIII^e siècle* (Paris : 1994).

- Farber P.L., "Buffon and the Concept of Species", *Journal of the History of Biology* 5 (1972) 259-284.
- Gillispie C.C., *Science and Polity in France at the End of the Old Regime* (Princeton : 1980).
- Gudger E.W., "Pliny's *Historia naturalis* : the Most Popular Natural History ever Published", *Isis* 6, 3 (1924) 269-281.
- Hippocrate, *Opera omnia. Graece et Latine edita, et ad omnes alias editiones accommodata. Industria et diligentia Joannis Antonidae Vander Linden*, 2 vols. (Leyde, Daniel, Abraham et Adriaan van Gaasbeeck : 1665).
- Jardine N. – Secord J.A. – Spary E.C. (éds.), *Cultures of Natural History* (Cambridge : 1996).
- Labarre A., "Diffusion de l'*Historia naturalis* de Pline au temps de la Renaissance", in Geck E. – Pressler G. (éds.), *Festschrift für Claus Nissen* (Wiesbaden : 1973) 451-469.
- Lovejoy A.O., "Buffon and the Problem of Species", in Glas B. – Temkin O. – Strauss W.L. (éds.), *Forerunners of Darwin : 1745-1859* (Baltimore : 1959) 84-113.
- Loveland J. – Schmitt S., "Poinsinet's Edition of the *Naturalis Historia* (1771-1782) and the Revival of Pliny in the Sciences of the Enlightenment", *Annals of Science* 72, 1 (2015) 2-27
- Mornet D., *Les Sciences de la nature en France, au XVIII^e siècle. Un chapitre de l'histoire des idées* (Paris : 1911).
- Naas V., *Le Projet encyclopédique de Pline l'Ancien* (Rome : 2002).
- Nauert C.G., "Caius Plinius Secundus", in Cranz F.E. (éd.), *Catalogus translationum et commentariorum : Mediaeval and Renaissance Latin Translations and Commentaries* (Washington : 1980) vol. 4, 297-342.
- Paradis S., *Imagination, jugement, génie : la fabrique des quadrupèdes dans l'Histoire naturelle de Buffon* (thèse de doctorat de l'Université Laval, Québec : 2008).
- Perifano A. (éd.), *Pline l'Ancien à la Renaissance*, in *Archives internationales d'histoire des sciences* 61, 166-167 (2011) 3-453.
- Pline l'Ancien, *Histoire naturelle de Pline, traduite en français, avec le texte latin rétabli d'après les meilleures leçons manuscrites ; accompagnée de notes critiques pour l'éclaircissement du texte, et d'observations sur les connoissances des Anciens comparées avec les découvertes des Modernes*, éd. Louis Poinsinet, 12 vols. (Paris, Veuve Desaint : 1771-1782).
- Pline l'Ancien, *Historia natural de Cayo Plinio Segundo : Traducida por el licenciado Geronimo de Huerta*, 4 vols. (Madrid, Juan González : 1624-1629).
- Pline l'Ancien, *Historiae mundi libri XXXVII*, éd. Jacques Daléchamps (Lyon, Barthélemy Honorat : 1587).
- Pline l'Ancien, *Historiae naturalis liber nonus de aquatiliu natura*, éd. Laurentius Theodorus Gronovius (Leyde, Theodorus Haak and Samuel and Johannes Luchtmans : 1778).

Roger J., *Buffon. Un philosophe au Jardin du Roi* (Paris : 1989).

Sallmann K.G., *Die Geographie des älteren Plinius in ihrem Verhältnis zu Varro* (Berlin : 1971).

Schmitt S., “La question de l'espèce, de sa constance et de ses variations chez Buffon et ses contemporains”, in Buffon, *Œuvres complètes* vol. 5, 12-68.

Sloan P.R., “Buffon, German Biology, and the Historical Interpretation of Biological Species”, *British Journal for the History of Science* 12, 2 (1979) 109-153.

Sloan P.R., “The Buffon-Linnaeus Controversy”, *Isis* 67, 3 (1976) 356-375.

Sloan P.R., “The Idea of Racial Degeneracy in Buffon's *Histoire naturelle*”, in Pagliaro H.E. (éd.), *Racism in the Eighteenth Century* (Londres-Cleveland : 1973) 293-321.

Spary E.C., “The ‘Nature’ of Enlightenment”, in Clark W. – Golinski J. – Schaffer S. (éds.), *The Sciences in Enlightened Europe* (Chicago : 1999) 272-304.

Spary E.C., *Utopia's Garden : French Natural History from Old Regime to Revolution* (Chicago : 2000).

Théophraste, *History of Stones. With an English Version, and Critical and Philosophical Notes*, éd. John Hill (Londres, sans nom d'imprimeur, For C.Davis : 1746).

Théophraste, *Traité des pierres de Théophraste traduit du Grec ; avec des Notes physiques et critiques, traduites de l'Anglois de M. Hill* (Paris, Thomas Hérisant : 1754).

Tomlinson R.C., “‘Plusieurs choses qu'il n'avoit veuës’ : Antoine Du Pinet's translation of Pliny the Elder (1562)”, *Translation and Literature* 21 (2012) 145-161.

Empiricism and Sensibility in the Australian Journal of Théodore Leschenault de La Tour (1800-1803)

Paul Gibbard

In reading the manuscript journal of the French botanist Théodore Leschenault de la Tour, who travelled with the Baudin expedition to Australasia in the years 1800 to 1803, a modern reader may be struck by what appear to be dramatic variations in tone. At one moment Leschenault may offer a detailed and precise description of a new plant he has encountered, in a voice that seems to strive for detachment and objectivity, and in the next supply a highly emotive depiction of the landscape, of his companions, of the indigenous peoples he has met, or of his own state of mind. The relations between empirical observation and the emotions in late eighteenth-century French scientific practice have attracted closer attention from historians of science in recent years, who have suggested that the adoption of Lockean sensationalist ideas in France supplied thinkers with the grounds for treating the emotions provoked by sensations as valid sources of knowledge. Leschenault was writing in a period, however, when some in France were starting to question whether it was consistent for works of scientific observation to continue to bear the imprint of an individual sensibility. In analysing the relations between empirical observation and the expression of sensibility in Leschenault's journal, I look firstly at the function that a naturalist's journal was expected to fulfil on the Baudin expedition, and the three different audiences for which Leschenault wrote: his family and friends, his fellow botanists, and government officials. I then place Leschenault's writings in the context of the Lockean sensationalist tradition in France, and the way in which different botanists, such as Buffon and Jussieu, interpreted this tradition. I conclude by considering the manner in which various modes of expression, such as the sentimental letter and literary nature-writing, may have influenced Leschenault's style.

1 The Function of the Journal

The French expedition of 1800 to 1804 to the southern lands was conceived by the botanist Antoine-Laurent Jussieu as a voyage of scientific discovery. In the wake of Nicolas Baudin's journey to the Caribbean of 1796-1798, in which large collections of natural history had been made, Jussieu, a professor at the Muséum d'Histoire Naturelle, urged Eustache Bruix, the Minister of the Navy and Colonies, to sponsor a more ambitious scientific voyage, also to be led by Baudin.¹ Subsequent draft proposals from various parties placed different emphases on scientific enquiry, the charting of unknown coasts, commercial gain and strategic interests. In April 1800 Napoleon endorsed a plan for the exploration of South-West New Holland, which would map new coastlines, and bring back botanical and zoological specimens which could be naturalised in France.² The formal instructions regarding the duties of the naturalists aboard the expedition came from two main sources: the Ministry of the Navy and Colonies, and a commission of the Institut National des Sciences et des Arts, headed by Jussieu.

The instructions given to the botanists were for the most part general in nature. One set retained by Baudin supplied a list of rudimentary questions:

What are the main, dominant or rare species of tree which make up the forests? Are any types of fruit traded? What use do the natives make of the trees. What other uses can be made of the wood and fruits. Idem for shrubs and fruits.³

Instructions given by the Académie des Sciences also emphasized utility, directing the naturalists' enquiries towards plants used by indigenous peoples

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- 1 See Horner F., *The French Reconnaissance: Baudin in Australia, 1801-1803* (Melbourne: 1987) 28-35, and Baudin Nicolas, *Journal du voyage aux Antilles de la Belle Angélique, 1796-1798*, ed. M. Jangoux (Paris: 2009).
 - 2 See the memorandum by Forfait of 29 April 1800, cited by Jangoux M., *Le Voyage aux terres australes du commandant Nicolas Baudin: genèse et préambule (1798-1800)* (Paris: 2013) 162. (All dates have been converted from the Revolutionary Calendar to the Gregorian.)
 - 3 "Questions d'histoire naturelle", unsigned and undated memorandum, in Baudin Nicolas, *Mon voyage aux terres australes: journal personnel du commandant Baudin*, ed. J. Bonnemains (Paris: 2000) 50: 'Quelles espèces principales, dominantes ou rares, d'arbres qui forment les forêts? Quel usage font de ces arbres les naturels du pays? Y a-t-il des fruits dont on fasse commerce? Quels autres usages peut-on faire des bois et des fruits? Idem au sujet des arbustes et des fruits'.

'as food, medicine or in relation to the productive arts'.⁴ The final instructions for the voyage, drawn up by the commission and endorsed in September 1800 by Alexandre Forfait, the new Minister of the Navy and Colonies, contained few explicit directions in the realm of botany, stating simply that Baudin should aim to collect plants that were capable of being preserved and grown back in France.⁵ For further details about the duties of the naturalists, Baudin was referred to the instructions given by Louis XVI to La Pérouse for the expedition which had set out in 1785:

He [La Pérouse] will examine the nature of the soil and the plants of different regions, and everything that is related to the physics of the globe. He will collect natural, terrestrial and marine curiosities; he will classify them by order, and will draw up a detailed description of each species in which he will record the places where they have been found, the use that the local natives make of them, and, where plants are concerned, the properties that the natives attribute to them.⁶

In most of the instructions for the botanists, the emphasis is on discovering useful plants that were capable of being transplanted to France and commercially exploited; except in the directions given to La Pérouse, the identification and classification of new species seem to be less important than utility. Leschenault received further directions from a fellow botanist, Augustin Pyrame de Candolle, in the form of 'a note on experiments to be performed on monocotyledons', which were far more specific than anything supplied by

4 "Mémoire rédigé par l'Académie des Sciences, pour servir aux savants embarqués sous les ordres de M. de La Pérouse", in Milet-Mureau Louis Antoine, *Voyage de La Pérouse autour du monde*, 4 vols. (Paris, L'Imprimerie de la République: 1796-1797) vol. 1, 174: 'soit pour la nourriture, soit en médecine, soit relativement aux arts'.

5 "Mémoire pour servir d'instruction particulière au citoyen Baudin, capitaine des vaisseaux de la République, commandant les corvettes *Le Géographe* et *Le Naturaliste* dans le voyage d'observations et de recherches relatives à la géographie et à l'histoire naturelle, dont la conduite et la direction lui sont confiées", in Jangoux, *Le Voyage aux terres australes* 290.

6 "Mémoire du roi pour servir d'instruction particulière au sieur de La Pérouse", in Milet-Mureau, *Voyage de La Pérouse*, vol. 1, 48-49: 'Il fera examiner la nature du sol et les productions des différents pays, et tout ce qui est relatif à la physique du globe. Il fera recueillir les curiosités naturelles, terrestres et marines; il les fera classer par ordre, et fera dresser, pour chaque espèce, un catalogue raisonné, dans lequel il sera fait mention des lieux où elles auront été trouvées, de l'usage qu'en font les naturels du pays, et, si ce sont des plantes, des vertus qu'ils leur attribuent'.

the ministry or the commission to Baudin.⁷ While Leschenault, in the various writings he produced, does comment on the uses made by indigenous peoples of the plants he comes across, his first concern seems to be in describing, classifying and preserving plant samples, without particular regard for their possible utility; that is, he adopts a more academic botanical perspective than that which is advocated in the instructions.

Théodore Leschenault de la Tour was just under twenty-seven years old when he sailed out from Le Havre with the Baudin expedition. He had been born in 1773 into a prominent family from Châlon-sur-Saône, whose male ranks had generally practised law or medicine. During the Terror of 1794 he suffered imprisonment, and then in 1796 enrolled at the School of Medicine in Paris, where he studied botany, and undoubtedly attended lectures at the Muséum d'Histoire Naturelle. As part of his application to join the expedition as a naturalist, he sent Jussieu a long letter setting out the detailed botanical observations he intended to make, focusing on a plant's environment, its root structure, stem, seed-leaves, leaf form, flowers and sexual organs. He concluded the letter with a description of his other skills:

I must warn you that in addition to my poor knowledge of botany I have had extensive practice in drawing [...], and have enough experience of writing that I may with ease describe a site or narrate an event. Aged twenty-seven, I have a well-developed character, and enough philosophy to support the monotony and hardship of a long and difficult voyage.⁸

Jussieu, in recommending Leschenault for the expedition, stated that this student of the Muséum had studied botany for several years, knew enough to be able to name, draw and dry the specimens he would collect, and, furthermore, had 'a gentle, sociable nature', and had enjoyed a 'good upbringing'.⁹ Leschenault and Jussieu insist on the importance of empirical and practical skills, but also place emphasis on character and sensibility. And Leschenault,

7 Leschenault to Jussieu, 27 September 1800, cited in Jangoux, *Le Voyage aux terres australes* 208: 'une note des expériences à faire sur les monocotylédones'.

8 Cited by Jangoux, *Le Voyage aux terres australes* 207: 'Je dois prévenir que je joins aux faibles connaissances que j'ai en botanique, une longue pratique du dessin [...], une habitude d'écrire assez grande pour pouvoir, avec facilité, faire la description d'un site ou la narration d'un événement. Âgé de 27 ans, j'ai le caractère formé, assez de philosophie pour supporter avec courage la longueur et les charges d'un voyage long et pénible' (I have modernised the spelling and punctuation of Leschenault's manuscript letters and journal throughout).

9 Cited by Jangoux, *Le Voyage aux terres australes* 205: 'un caractère doux et très sociable', 'une bonne éducation'.

in drawing attention to his talent for description and narration, was invoking a skill which might not simply entail precision but also the exercise of sensibility.

If the instructions for the naturalists seem mainly to demand empirical expertise, the formats in which members of the expedition recorded information nevertheless allowed for the expression of personal reflections. The types of written records made by members of the expedition were highly varied, and included logbooks, notes, tables, catalogues, journals, sketchbooks and labels for specimens. Among the sequential accounts, the ships' logbooks, kept by the naval officers, were generally stark in relation to personal sentiment: they simply record such things as wind directions, the ships' bearings, the disposition of sails, and brief general observations. It was also a requirement that all officers and scientists of the expedition should keep personal journals. As Margaret Sankey points out, the officers' journals commonly reproduce the information of the logbooks, offering few additional descriptions of the peoples and places encountered.¹⁰ There were exceptions, however, and the narratives of officers such as Baudin, Milius and Saint-Cricq range much more broadly. Baudin in fact kept two journals: an individual journal (called a *journal de mer* or *journal de bord*), and a second 'edited journal' (as he called it), adapted from the first, and embellished with additional documents, letters and illustrations, which was probably intended to form the basis of the official account of the voyage, to be published on his return to France. If, as Sankey observes, this second journal was to be the 'public face of the voyage', the first was partly also 'a personal, intimate journal in which Baudin could escape briefly [...] from his official role, and note his private thoughts and feelings, [...] his pleasure in being at sea' and supply 'poetic descriptions'.¹¹ As Odile Gannier notes, many different considerations could converge in a shipboard journal of this period – it could serve an official function, being a record for the authorities, a collective function, documenting information for the benefit of the crew as a whole, a personal function, in the individual analysis or proposals that might be registered, and an intimate function, in the form of private reflections and commentaries.¹²

Something of a paradox, however, can be discerned in the way intimate thoughts were recorded in the journals of the Baudin expedition. The journals were not officially considered to be the property of their authors; in fact, it was

10 See Sankey M., "Writing the Voyage of Scientific Exploration: the Logbooks, Journals and Notes of the Baudin Expedition (1800-1804)", *Intellectual History Review* 20, 3 (2010) 401-413.

11 Sankey, "Writing the Voyage of Scientific Exploration" 407.

12 Gannier O., "La compilation et l'usage des journaux de bord dans l'histoire des idées et des sciences", in Linon-Chipon S. – Vaj D. (eds.), *Relations savantes: voyages et discours scientifiques* (Paris: 2006) 71.

stated that all written records (and objects collected) automatically became the property of the French government. Forfait asked Baudin to make this clear to the naturalists:

before you leave, inform these people on my behalf that it is expressly forbidden for them, as it is for officers and midshipmen, to pass on to others the journals that they keep, or to make any collections for their personal account. It is the Republic that defrays all the expenses of the expedition, and it is she alone who must reap the rewards [...]. In accordance with these orders, I direct you, when you are on the point of re-entering our ports, to collect all the journals written aboard the two corvettes, and to allow no one to go ashore before you are certain that each has fulfilled his duty in this respect.¹³

Forfait no doubt felt obliged to be strict on this point in wake of problems that had arisen on previous expeditions. The naturalist Robert Paul de Lamanon had argued with La Pérouse over the boundaries between individual and state property, while Louis Ventenat, chaplain and naturalist of the d'Entrecasteaux expedition, questioned whether the state had 'the right to take from individuals the fruit of their work'.¹⁴ Another naturalist of the d'Entrecasteaux expedition, Jacques-Julien Houtou de Labillardière, had managed, after various tribulations, to retain possession of his journal, notes and botanical collections. For all Forfait's precautions, several officers of the Baudin expedition expressed discontent at having to submit their journals to their commander.¹⁵

The writings which Leschenault produced in relation to the Baudin expedition take a number of forms. It appears that he kept a journal for the majority of his travels, although until recently it was thought that only one section of it

13 Forfait to Baudin, 29 September 1800, in Baudin, *Mon voyage aux terres australes* 99: 'avant de partir, notifiez de ma part à ces personnes, comme aux officiers et aux aspirants, qu'il leur est expressément défendu de communiquer les journaux qu'ils tiendront, et de former aucune collection pour leur compte personnel. C'est la République qui pourvoit à toutes les dépenses de l'expédition, c'est elle seule qui doit en recueillir le fruit [...]. Par suite de ces ordres, je vous prescrite de vous faire remettre, lorsque vous serez au moment de rentrer dans nos ports, tous les journaux tenus à bord des deux corvettes, et de ne laisser personne descendre à terre avant que vous vous soyez assuré que chacun a satisfait à son devoir sur ce point'.

14 Cited in English by Harrison C.E., "Projections of the Revolutionary Nation: French Expeditions in the Pacific, 1791-1803", *Osiris* 24, 1 (2009) 33-52, specifically 47. See also Clode D. – Harrison C.E., "Precedence and Posterity: Patterns of Publishing from French Scientific Expeditions to the Pacific (1785-1840)", *Australian Journal of French Studies* 50, 3 (2013) 361-379.

15 See Harrison, "Projections of the Revolutionary Nation" 47, who mentions Louis de Freycinet, François-Michel Ronsard and Léon Brévedent in this regard.

(comprising chapters labelled three, four and five) had survived.¹⁶ These chapters cover the one-year period from April 1801 (departure from Île de France)¹⁷ to April 1802 (arrival in Sydney), and appear in the hand of a copyist, who made occasional errors in transcribing botanical names.¹⁸ The journal in the hand of the copyist fills 196 pages, and consists of just under 38 000 words. Leschenault also wrote letters to Jussieu from the expedition's ports of call, Tenerife, Île de France, Timor and Sydney: of these, only the Sydney letter, composed on 11 November 1802, seems to have survived. When the *Naturaliste* sailed out of Sydney in November 1802, bound for France, it carried with it Leschenault's journal, his letter to Jussieu, four of his notebooks (containing descriptions in Latin of forty new plant species along with drawings), and three cases of specimens. All his other notebooks, which by November 1802 contained descriptions of a further 150 new plants, appear to have been lost. The second ship of the expedition, the *Géographe*, continued to explore Australia, and Leschenault travelled aboard it for a further six months, until he was forced to leave the expedition at Timor in May 1803 due to ill-health. After recovering, he travelled independently in Java for several years, and only returned to France in July 1807. There he published two short pieces relating to the expedition, one on the town of Kupang in Timor, and another on the vegetation of New Holland, which was reproduced in Péron and Freycinet's official account of the expedition (Baudin having died at Île de France during the return journey).¹⁹ While short excerpts from Leschenault's journal were also incorporated into the official account, he never seems to have intended to publish his journal, or his plant descriptions (which were rendered partially redundant by the appearance of Robert Brown's *Prodromus Florae Novae Hollandiae et Insulae Van Diemen* in 1810). Leschenault contracted with the Imprimerie Impériale to publish a 'Malay dictionary' based on the vocabulary he had gathered on his travels, but these plans were frustrated by upheavals at the Imprimerie after the fall of Napoleon. Leschenault in fact published many more pieces on his

16 "Extrait de la relation de l'expédition de découverte commandée par le citoyen Baudin, capitaine de vaisseau, du citoyen Théodore Leschenault, botaniste", Paris, Archives Nationales, Série Marine, 5JJ56.

17 'Île de France' was the name given by the French to the island of Mauritius during the period they controlled it, from 1715 to 1810.

18 On 3 December 2016, however, Leschenault's complete original holograph manuscript was put up for sale by the auction house of Geoffroy and Bequet in Royan. It includes the missing first and second chapters (concerning the legs from Le Havre to Tenerife, and Tenerife to Île de France), but it was not able to be consulted for the present article.

19 Péron François – Freycinet Louis de, *Voyage de découvertes aux terres australes, exécuté par ordre de sa majesté l'Empereur et Roi, sur les corvettes Le Géographe et Le Naturaliste et la goélette Le Casuarina pendant les années 1800, 1801, 1802, 1803, et 1804*, 4 vols. (Paris, L'Imprimerie Impériale: 1807-1816).

travels and discoveries in the Dutch East Indies, and on his later botanising in India and Ceylon, than on his work with the Baudin expedition.

After the return of the *Géographe* to France, the new Minister of the Navy and Colonies, Denis Decrès, decreed that all the journals, charts and geographical drawings compiled by the expedition should be sent to the Ministry, while the scientific materials – specimens, notes and drawings – should be sent to the professors of the Muséum d'Histoire Naturelle.²⁰ Accordingly, Leschenault's botanical notebooks were retained by the Muséum, while a copy of his journal was kept by the Ministry – Jussieu probably receiving the original. On 29 June 1803, Leschenault's brother Samuel, who resided in Châlon-sur-Saône, wrote excitedly to Jussieu to alert him to the journal's arrival in France:

I have just this moment received a letter from my brother, and I hasten to inform you that you are to receive his *journal historique* – although I presume that it will have reached you before this letter.²¹

After being copied, the journal was probably then forwarded by Jussieu to the Leschenault family, in accordance with the young botanist's request:

Once you have read my journal and passed on any information that you consider to be of use to the expedition, I ask you to forward it to my good mother, whom I have already notified.²²

The terminology used by Leschenault and his contemporaries in relation to the journal casts light on its perceived function. In his letter to Jussieu from Sydney, he states:

I have written to you from Tenerife, Île de France and Timor in turn, and have given you a succinct account of my work. I am going a step further than that today, and am sending you my personal diary [*journal*

20 See Bonnemains, "Les relations écrites du 'Voyage aux terres australes'", in Baudin, *Mon voyage aux terres australes* 19.

21 Samuel Leschenault de Rupt to Jussieu, 29 June 1803, Paris, Muséum National d'Histoire Naturelle, Fonds Phanérogamie, Fonds Jussieu: 'Je reçois à l'instant une lettre de mon frère, et je m'empresse de vous faire part que vous devez recevoir son journal historique, mais je présume qu'il vous sera parvenu avant cette lettre'.

22 Leschenault to Jussieu, Sydney, 11 November 1802, cited in Desmet V. – Jangoux M., "Un naturaliste aux terres australes: Jean-Baptiste Leschenault de la Tour (1773-1826)", in Jangoux M. (ed.), *Portés par l'air du temps: les voyages du capitaine Baudin* (Brussels: 2010) 225-232: 'Lorsque vous aurez pris lecture de mon journal et fait connaître ce que vous croirez utile à l'expédition, je vous prie de le faire passer à ma bonne mère à laquelle je l'annonce'.

particulier], along with descriptions and drawings of forty plants which belong, I believe, to new genera.²³

Leschenault describes his journal as a *journal particulier*, a private (or personal) diary – private, presumably, by contrast with the notebooks containing his plant catalogue, which, written in Latin, and accompanied by technical drawings, had a more official or professional character. The minister, Forfait, also uses the term *journal particulier* to refer to the naturalists' journals: although for him, it is clear, a 'personal' journal does not imply private property.²⁴ Leschenault's journal is also, as Samuel Leschenault mentions, '*historique*', that is to say, structured as a chronological relation of events – once more, in contrast to the plant notebooks.

Neither the French government nor the scientific commission appears to have given the naturalists precise instructions about how events were to be recorded in either the journals they wrote or the catalogues of new species they compiled. Instructions for the earlier expedition of La Pérouse, however, indicated that naturalists were to compile a *catalogue raisonné* of species – a term which would adequately apply to Leschenault's plant notebooks. As to the format of the *journal historique* – the professors may simply have passed on oral instructions, or assumed that senior members of the expedition, some of whom had travelled with Baudin to the Caribbean, did not require direction in this area. For Baudin's previous expedition, Jussieu had in fact drawn up guidelines for the naturalists about the two types of written record that should be kept:

They [...] will keep a journal in which each object is described [*un journal de description de chaque objet*]. Separately from this journal, they are asked to make another in which they will daily record all the events and the history of their voyage, including observations of any other type that they are able to make.²⁵

23 Leschenault to Jussieu, 11 November 1802, cited in Desmet and Jangoux, "Un naturaliste aux terres australes" 226: 'Je vous ai successivement écrit de Ténériffe, l'Île de France et Timor; je vous rendais un compte succinct de mon travail. Je fais plus aujourd'hui, je vous adresse mon journal particulier et quarante plantes décrites et dessinées que je crois appartenir à des genres nouveaux'.

24 See Forfait's "Mémoire", in Jangoux, *Le Voyage aux terres australes* 296.

25 Jussieu Antoine-Laurent de, "Instructions rédigées par M. de Jussieu pour les naturalistes de l'expédition", in Ledru André-Pierre, *Voyage aux îles de Ténériffe, La Trinité, Saint-Thomas, Sainte-Croix et Porto-Ricco, exécuté par ordre du gouvernement français, depuis le 30 septembre 1796 jusqu'au 7 juin 1798, sous la direction du capitaine Baudin, pour faire des recherches et des collections relatives à l'histoire naturelle*, 2 vols. (Paris, Arthus

The *journal de description de chaque objet* is obligatory, and corresponds to the format of the *catalogue raisonné*, while the second type of journal is a less formal, apparently optional, narrative of events, in which the naturalist may record whatever reflections and digressions occur to him. Leschenault's journal corresponds in some respects to this second type of journal, the *journal historique*, while also combining features of the *catalogue raisonné*.

In his journal Leschenault integrates descriptions of the plants, animals, peoples and landscapes he observes with a personal narrative of the events that unfold during the voyage. In places he inserts general reflections on what he has witnessed: he muses, for example, on the natural forces that have shaped a region of New Holland, or on whether parts of New Holland could support agriculture. He offers his opinions on the morality of its peoples, the degree of their 'civilization', and their migratory history. He also offers judgements on his companions aboard the expedition and the decisions of its commander, Baudin.

If the plant descriptions Leschenault supplies in his journal are not generally as detailed as those he records in his notebooks, the language is often spare, sober and impersonal. Thus, in describing a species of grass tree found in South-West New Holland, he writes:

The trunk of this tree grows to seven or eight feet in height and often bifurcates; from the top of each part issues a thick clump of very brittle leaves, filled with pith, and resembling a clump of grass. These leaves have the form of diamond-shaped quadrangular prisms, broadening markedly towards their base.²⁶

This closely observed description of the plant continues at length; Leschenault also comments on the use made of the plant by the indigenous people, in line with official instructions, and attempts to classify it. After going ashore in Geographe Bay, Leschenault records that:

Bertrand: 1810) vol. 1, xvii: 'Ils [...] tiendront un journal de description de chaque objet. Indépendamment de ce journal, ils sont invités à en faire un autre, dans lequel ils consigneront, jour par jour, tous les événements et l'histoire de leur voyage, en y joignant les observations de toute espèce qu'ils seront à portée de faire'.

- 26 Leschenault, "Extrait" 7: 'Le tronc de cet arbre s'élève de sept à huit pieds. Souvent il se bifurque, de chaque sommet sort une touffe épaisse de feuilles très cassantes remplies de moelle et ayant l'apparence d'une touffe de graminées. Ces feuilles ont la forme de prismes quadrangulaires en losange, s'élargissant beaucoup à leurs bases'.

A species of creeping *Mesembryanthemum* with white flowers and thick triangular leaves grows there – might it be *edule*? Several species of undershrub are also found there, among which I observed one from the *Orache* family – an *Atriplex* whose leaves and stem are very downy, and which has a salty taste.²⁷

Using the evidence of his senses, taste as well as sight, Leschenault records the precise features of the plants he observes, and attempts to classify them. A personal note creeps into this method as Leschenault poses a question to himself about the species of *Mesembryanthemum* he has observed, creating a sort of internal dialogue which differentiates it from his notebook descriptions. Similar technical descriptions of natural phenomena occupy large parts of the journal. This does not however mean that the journal is entirely impersonal or objective in tone: in fact, as will be discussed in the next section, Leschenault seems to view the emotions provoked in him by the phenomena he has witnessed or events he has experienced as equally worthy of careful record.

2 Observation and Emotion

In the letter written to Jussieu from Sydney, Leschenault reflects at length on the process of writing his journal. He discusses the way in which his habits of observation have contributed to the construction of knowledge:

I have avoided the systematic turn of mind [*l'esprit systématique*], which I believe to be detrimental to observation, and have supplied only an account of phenomena [*faits*]. Sometimes, however, I have permitted myself a few reflections. But, often, later observations have made me aware that I was mistaken in my conjectures, and consequently you will find a great many crossings-out and added notes in my journal. There would have been a great many more if I had had the time to reread it closely and to meditate each of the sensations I felt in the act of observing.²⁸

27 Leschenault, "Extrait" 9: 'Là croît une espèce de *Mesembryanthemum* rampant dont les fleurs sont blanches, les feuilles épaisses et triangulaires, est-ce l'*edule*? On y voit aussi quelques sous-arbrisseaux parmi lesquels j'en ai remarqué un de la famille des *Aroche*. C'est un *Atriplex* dont les feuilles et la tige sont très cotonneuses, et d'une saveur saumâtre'.

28 Cited in Desmet – Jangoux, "Un naturaliste aux terres australes" 226: 'Eloignant de moi l'esprit systématique que je crois préjudiciable aux observations, j'ai seulement rendu compte des faits. Quelquefois, cependant, je me suis permis quelques réflexions. Mais

The language Leschenault uses is revealing: *sensation* and *reflection* are key terms in empirical epistemology, as developed by Locke and adapted in France by the sensationalists, while the *systematic mentality* was a notion debated by Condillac, Locke's French champion, as well as by botanists concerned with methods of plant classification. It is clear from this letter that Leschenault approaches his journal-writing with a certain degree of sophistication: he is conscious of his own methodology, and is aware of some of the philosophical notions that underpin it.

During the eighteenth century, figures such as Voltaire and Condillac helped to fan the spread of Lockean empiricism in France, and French naturalists responded with interest to Locke's ideas. Buffon, for example, found in Locke the grounds by which he could reject Linnaean taxonomy, condemning it as an abstraction of the mind bearing no relation to reality.²⁹ His debt to Locke is clearly evident in the 'First Discourse' of his *Histoire naturelle*, in which he attempts to describe the way in which the mind distinguishes between different objects:

One does not imagine that in time one will reach the stage of recognising all these different objects [...]; however, as we grow familiar with these objects, seeing them often and, as it were, without design, they gradually form lasting impressions, which soon become linked within our minds in fixed and invariable relations, and from there we progress to more general views.³⁰

souvent des observations postérieures m'ont fait connaître que je m'étais trompé dans mes conjectures, aussi vous trouverez dans mon journal un grand nombre de ratures et de notes ajoutées. Il y en aurait eu beaucoup plus si j'avais eu le temps de relire avec attention et de méditer chacune des sensations que j'ai éprouvées lors de l'observation'.

29 See Sloan P.R., "The Buffon–Linnaeus Controversy", *Isis* 67, 3 (1976) 356–375, and Spary E.C., *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: 2000) 195–196.

30 Buffon, Georges-Louis Leclerc, comte de, "Premier discours: de la manière d'étudier et de traiter l'histoire naturelle", in *Histoire naturelle, générale et particulière*, 36 vols. (Paris, L'Imprimerie Royale: 1749–1788) vol. 1, 5: 'On ne s'imagine pas qu'on puisse avec le temps parvenir au point de reconnaître tous ces objets différents [...]; cependant, en se familiarisant avec ces mêmes objets, en les voyant souvent, et, pour ainsi dire, sans dessein, ils forment peu à peu des impressions durables, qui bientôt se lient dans notre esprit par des rapports fixes et invariables; et de là nous nous élevons à des vues plus générales'.

Called 'Locke's disciple' by one historian of science, Buffon here adapts the Lockean conception of the way in which ideas are formed in developing his own theory of classification.³¹

The emotions occupied an important position in Locke's theory, and French scientists who adopted sensationalism at times placed an even greater emphasis on their epistemological function. Locke had posited in his *Essay on Human Understanding* (1690) that man did not possess innate ideas – the mind was like a piece of 'white paper', and all ideas came from sensation or reflection, which formed the basis for more complex forms of knowledge.³² For Locke, sensation and reflection also gave rise to the 'simple ideas' of pleasure and pain, which in turn shaped human emotions: 'Pleasure and pain, and that which causes them, good and evil, are the hinges on which our passions turn'.³³ French followers of Locke took these notions and went a step further, according to Jessica Riskin, and they classed 'ideas and moral sentiments as expressions of sensibility, movements of the body's parts in response to sensory impressions of the outside world'.³⁴ One of the later sensationalists, Antoine Destutt de Tracy, summed up the identity of idea and feeling in these terms: 'it is clear [...] that our perceptions or our ideas [...] are things that we feel, and, consequently, that *to think* is *to feel*'.³⁵ Riskin argues that this current of thought strongly influenced French scientists in the latter half of the eighteenth century, who took the view that an understanding of nature did not derive solely from 'sensory experience, but from a combination of sensation and sentiment' – in a development she labels 'sentimental empiricism'.³⁶ The naturalist Jean Senebier, who conducted early experiments into photosynthesis, gives an indication in *L'Art d'observer* (1775) of the way in which sensibility and sensation were closely linked:

The observer is a man who [...] comes to nature with all his senses, and, using them, he examines it as it offers itself to him, he participates in all

31 Roger J., *Buffon: a Life in Natural History*, trans. S.L. Bonnefoi, ed. L. Pearce Williams (Ithaca: 1997) 83.

32 Locke John, *An Essay concerning Human Understanding* (London, Elizabeth Holt: 1690), book 2, chap. 1, §2, 37.

33 Locke, *An Essay concerning Human Understanding*, book 2, chap. 20, §4, 113.

34 Riskin J., *Science in the Age of Sensibility: the Sentimental Empiricists of the French Enlightenment* (Chicago: 2002) 2.

35 Destutt de Tracy Antoine, *Éléments d'idéologie. Première partie: Idéologie, proprement dite*, 2nd ed. (Paris, Courcier: 1804) 26: 'il est clair [...] que nos perceptions ou nos idées [...] sont des choses que nous sentons, et que par conséquent *penser c'est sentir*' (original emphasis).

36 Riskin, *Science in the Age of Sensibility* 4.

the sensations that exterior objects give rise to in his mind: he is a lover who avidly contemplates the object of his desire.³⁷

The process of observation for Senebier is not separate from the experiencing of emotion; on the contrary, emotional participation is central to the process. In his letter to Jussieu from Sydney, Leschenault describes the emotions he experienced the first time he went collecting on the shores of New Holland:

the study of nature [...] is a source of great delight. It is only with difficulty that I may depict for you the sensations I felt the first time I went ashore on an unknown coast. I felt a confused pleasure which filled my mind, everything kindled my interest, pebbles, shells washed up on the beach, plants. I collected everything with incomparable eagerness but was soon obliged to abandon a portion of these riches I had recklessly amassed.³⁸

In this instance, as in many others he describes in his journal, observation of the natural world and the experience of emotion are closely paired, and he seems to conform to Senebier's notion of the 'philosophe sensible'. At the end of this paragraph, however, Leschenault sounds a note of warning: emotion has impaired his judgement as a collector. Is it possible to characterise this last line as a recognition of the need for something like the more modern notion of scientific objectivity? In a recent discussion of objectivity, Lorraine Daston and Peter Galison have drawn attention to its historical character. 'To be objective', as they assert, 'is to aspire to knowledge that bears no trace of the knower – knowledge unmarked by prejudice or skill, fantasy or judgement, wishing or striving'. They trace the origin of the concern with scientific objectivity to the middle of the nineteenth century, and observe that a naturalist of the eighteenth century might have 'ridiculed as absurd the notion that the kind of scientific knowledge most worth seeking was that which depended least on the personal traits of the seeker'.³⁹

37 Senebier Jean, *L'Art d'observer* (Geneva, Claude Philibert and Barthélemy Chirol: 1775) 5: 'L'observateur [...] se présente à la nature avec ses sens, il l'examine par leur moyen comme elle s'offre à lui, il se prête à toutes les sensations que les objets extérieurs font naître dans son âme: c'est un amant qui contemple avec avidité l'objet de son amour'.

38 Cited in Desmet – Jangoux, "Un naturaliste aux terres australes" 229: 'l'étude de la nature offre [...] de grandes jouissances. Difficilement je vous peindrai mes sensations lorsque je descendis pour la première fois sur une côte inconnue. J'éprouvai un plaisir confus qui remplissait mon âme, tout alors m'offrait de l'intérêt, cailloux, coquillages roulés sur la plage, plantes. Je recueillis tout avec une avidité qui ne peut être comparée à rien mais bientôt je fus obligé d'abandonner une partie de ces richesses inconsidérément amassées'.

39 Daston L. – Galison P., *Objectivity* (New York: 2007) 17, 59.

Certainly Buffon was one naturalist who, while espousing empirical observation over Cartesian rationalism, nevertheless thought that the talent and temperament of the individual observer was of paramount importance: he believed that it was necessary for the naturalist to have 'that first spark of genius, that seed of judgement'.⁴⁰ Other natural history writers in the late eighteenth and early nineteenth centuries, including Goethe and Alexander von Humboldt, also allot an important role to the individual response of the empirical observer. Goethe, in his essay *Empirical Observation and Science* (1798), argues that 'the observer never sees the pure phenomenon with his own eyes; rather, much depends on his own mood, the state of his senses, the light, air, weather, the physical object, how it is handled, and a thousand other circumstances'.⁴¹ Humboldt, who had initially applied to join Baudin's expedition to Australasia,⁴² travelled instead in the Americas between 1799 and 1804 – and spent several decades publishing his prolific account of the journey. In Humboldt's approach, as Nicholas Leask characterises it, 'aesthetic and emotional responses to natural phenomena counted as data about these phenomena, in contrast to their rigorous exclusion from contemporary practices of naval and military surveying'.⁴³ In the latter part of the eighteenth century, however, the methods of various scientists were starting to diverge: for example, experimental chemists, as Emma Spary points out that, began to place their trust in instrumentation over the evidence of the senses, while naturalists 'explicitly distinguished their enterprise from the art of experimentation by insisting that the possession of sensibility was a precondition for natural historical practice'.⁴⁴ If the naturalists of the Baudin expedition made use of instrumentation in recording air temperatures and sea temperatures, and even in testing the strengths of various Aboriginal men, they would not have rejected the assertion that the individual qualities of the naturalist were of crucial importance.

In his letter to Jussieu from Sydney, Leschenault describes the emotions he experienced while collecting, but also insists that his principal concern in his journal was to record *faits* – in this context, 'phenomena', 'events' or 'facts'. He claims to have avoided adopting the *esprit systématique*, or the 'systematic mentality'; that is, he strove to work as an empirical observer, recording

40 Roger, *Buffon*, 83.

41 Goethe Johann Wolfgang von, *Scientific Studies*, ed. and trans. D. Miller (New York: 1988) 24.

42 See Humboldt to Jussieu, 21 August 1798, cited in Jangoux, *Le Voyage aux terres australes* 28–29.

43 Leask N., *Curiosity and the Aesthetics of Travel Writing, 1770–1840: 'From an Antique Land'* (Oxford: 2002) 248–249.

44 Spary, *Utopia's Garden* 197.

his observations freely, unconstrained by any pre-existing, overarching system. This concern with avoiding the 'systematic mentality' reflected the view of his mentor Jussieu, who in his influential work of 1789, *Genera plantarum secundum ordines naturales disposita juxta methodum in Horto Regio Parisiensi exatarum*,⁴⁵ had sought to move away from Linnaeus's 'artificial' system of classifying plants on the basis of a small number of predetermined features – primarily the number and position of a plant's stamens and pistils. Jussieu insisted rather on the continuity of nature, and contended that all plant life was linked by small gradations in an unbroken chain.⁴⁶ He advocated not an 'artificial system' but a 'natural method' – by which plants were arranged into groups on the basis of a wide variety of features, according to relationships that appeared self-evident in nature.⁴⁷ If he placed emphasis on the seed (and in particular the number of seed leaves, or cotyledons), fruit and flower, other characteristics, such as the form of the root, stem and leaves, were also taken into account. In this movement away from a 'system' to a 'method', the classificatory relationships, as Spary puts it, were considered not to be 'creations but discoveries, prior to any theoretical intervention, transparently present to the eye of the beholder'.⁴⁸

The term *esprit systématique* had also featured in contemporary philosophical debates about rationalism and empiricism: Condillac had distinguished between the *esprit systématique*, which he associated with the empirical approach, and the *esprit de système*, or the dogmatic mentality of the rationalist, system-building philosophers of the seventeenth century.⁴⁹ In the 'Preliminary discourse' of the *Encyclopédie*, D'Alembert, too, spoke favourably of the *esprit systématique*, classing it as an approach which favoured the simplification of scientific principles, in contrast to the *esprit de système*. The anonymous author of the article 'Philosophy' in the *Encyclopédie* criticises the *esprit systématique* as being unempirical, since 'a true philosopher does not see with the eyes of others, he accepts only those convictions which are born of evidence'.⁵⁰ Leschenault, while using the term *esprit systématique* in a sense

45 The genera of plants, arranged in natural orders, according to the method demonstrated in the King's Garden of Paris, printed in Paris by Hérisant in 1789.

46 See Cook A., *Jean-Jacques Rousseau and Botany: the Salutary Science* (Oxford: 2012) 181.

47 See Stevens P.F., "How to Interpret Botanical Classifications – Suggestions from History", *BioScience* 47, 4 (1997) 243, and his book *The Development of Biological Systematics: Antoine-Laurent de Jussieu, Nature, and the Natural System* (New York: 1994) 23–62.

48 Spary, *Utopia's Garden* 198.

49 See Israel J., *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man, 1670–1752* (Oxford: 2006) 775–779.

50 See the *Encyclopédie, ou dictionnaire raisonnée des sciences, des arts et des métiers, par une société de gens de lettres*, 35 vols. (Paris: 1751–1780): D'Alembert, 'Discours préliminaire',

contrary to that of Condillac and D'Alembert, is in harmony with their views when he champions the liberation of observation from the constraints of an *a priori* system.

Leschenault owed his position on the expedition to Jussieu, and it is not surprising that the method he adopts in his plant classification should be that of his mentor. In their libraries, both vessels of the expedition carried copies of Jussieu's *Genera plantarum* and Etienne-Pierre Ventenat's adaptation of this work, the *Tableau du règne végétal selon la méthode de Jussieu* (1798), among other botanical works.⁵¹ In rejecting Linnaean systematics, Jussieu could be said, like Buffon, to be endorsing Lockean empiricism over Cartesian rationalism, but Jussieu's arguments are not couched as explicitly as Buffon's in Lockean language. And, of course, the differences between the 'artificial system' of Linnaeus and the 'natural method' of Jussieu, are not always as large as were sometimes claimed, and, in practical terms, both relied heavily on empirical skills of close observation and comparison. Jussieu seems to have differed from Buffon, however, in the place that he allots to the temperament of the observer. As Emma Spary explains, Jussieu based his 'natural method' on the concept of *affinités* or *rapports*, a concept borrowed from chemistry, and which referred to the 'more or less powerful tendency for bodies to contract a union'. Jussieu suggested that plants present 'pretty much the same nuances, the same gradation' as these bodies analysed by chemists, and that 'they have characters in which they approach one another, and those by which they differ'.⁵² By classifying plants according to 'inherent' properties, Jussieu instituted, as Spary suggests, 'an uncompromising exclusion of subjectivity', allowing naturalists 'to claim that "particular wills" could not intervene in the transition from observing to knowing'.⁵³ Writing his journal in 1801, Leschenault had to attempt to reconcile competing influences: the tradition of Buffon and other naturalists reserved a place for the sensibility of the naturalist, which was sometimes justified by reference to Locke, while another tendency, espoused by his mentor Jussieu, impelled him in a contrary direction. This might be one explanation for the slight hesitation that Leschenault displays when he reflects on his susceptibility to strong emotion.

vol. 1, vi; anonymous author, 'Philosophie', vol. 12, 514: 'un vrai philosophe ne voit pas par les yeux d'autrui, il ne se rend qu'à la conviction qui naît de l'évidence'.

51 See Jangoux, *Le Voyage aux terres australes* 317, Baudin, *Mon voyage aux terres australes* 90, and Fornasiero J. – West-Sooby J., "Baudin's books", *Australian Journal of French Studies* 39, 2 (2002) 215–249.

52 Jussieu, "Examen de la famille des Renonculées", *Mémoires de l'Académie Royale des Sciences* (1773) 214, cited in English by Spary, *Utopia's Garden* 198.

53 See Spary, *Utopia's Garden* 199.

3 Epistolary and Literary Sensibility

In composing his journal, Leschenault is conscious that he is addressing three different audiences: firstly, his family and close friends, secondly, Jussieu and other naturalists at the Muséum d'Histoire Naturelle, and, thirdly, the officials and functionaries of the Ministry of the Navy and Colonies. At times the material seems specifically intended for one of these three audiences: he directly addresses his mother, for example, when complaining of homesickness; the technical descriptions of plants appear to be primarily intended for professional botanists; while his reflections on the possibility of colonising New Holland or Van Diemen's Land would principally have been of interest to the government. Leschenault is aware, however, that all three audiences will read the journal, and does not seem particularly concerned by distinctions that might be made between the private and the public spheres, and between technical observation and the expression of sensibility. It is important to bear in mind that in late eighteenth-century France the manifestation of sensibility was considered by many to be proper to both public and private spheres – in certain strains of private correspondence as much in certain novels, and was also a feature of certain types of natural history writing.

In the archives relating to the Baudin expedition, some of the surviving letters between the botanists display a highly emotive register, and provide insight into some of the epistolary conventions of the period. Few of Leschenault's personal letters remain, but a letter addressed to Jussieu by André-Pierre Ledru, a young priest who had previously filled the role of botanist on Baudin's expedition to the Caribbeans, employs many terms characteristic of the language of sensibility. Having initially agreed to join the expedition to the southern lands, Ledru wrote to Jussieu explaining that he had been forced to withdraw out of consideration for his mother:

My very sensitive mother, who was not initially frightened by the thought of my voyage, was deeply affected when she read your latest letter. Since then she has scarcely stopped weeping, apprising me clearly enough that her heart is cruelly conflicted and that my sudden departure for an absence of three or four years would strike her a mortal blow. Torn between two imperious feelings, a son's piety and the desire to travel ... Consider, Citizen, how distressing my situation is.⁵⁴

54 Ledru to Jussieu, 20 July 1800, cited in Jangoux, *Le Voyage aux terres australes* 204: 'Ma très sensible mère que l'idée de mon voyage n'a point effarouchée d'abord, en a été extrêmement affectée à la lecture de votre dernière lettre. Depuis ce moment, ses larmes presque continuelles m'annoncent assez que son cœur éprouve le plus violent combat,

This letter, which is both a letter from one friend to another, but also an official letter of withdrawal, contains many terms of sentimental expression: *sensible*, *sentiments*, *larmes*, *cœur* and so on. It is a terminology that is common to late eighteenth-century novels of sensibility – among which Rousseau's *Julie, ou la Nouvelle Héloïse* (1761), which Rousseau sought to pass off as a genuine collection of intimate letters, and Bernardin de Saint-Pierre's *Paul et Virginie* (1788), are two representative examples. A similar sort of language runs through Leschenault's journal, woven among his detailed observations of plants, peoples, animals and landscapes, and even features – rendered into Latin – in his plant notebooks.

The opening line of the surviving section of Leschenault's journal in fact points to the way in which his sensibility pervades the text. Of his journey towards the uncharted coast, he writes:

We had a very favourable passage to New Holland and endured no discomfort apart from that occasioned by the absence of our friends who had remained at the Île de France.

During our passage we saw a great many Cape petrels [...] ⁵⁵

After commenting on the feelings aroused by his separation from his friends, Leschenault moves seamlessly to a detailed description of the behaviour of a particular species of petrel. Throughout the journal Leschenault displays great concern for the health and welfare of his colleagues. After his vessel the *Géographe* had lost contact with its companion ship the *Naturaliste*, Leschenault writes:

Her delay left us in almost no doubt that she had been wrecked. Our unfortunate comrades were often in our thoughts: we imagined the harrowing scene of our friends perishing among the waves, or wandering a wild shoreline. These gloomy, wearying thoughts finally gave way to gladder sentiments when [...] a ship appeared in the West [...] and our hearts were filled to the brim with joy. ⁵⁶

et que mon départ précipité pour une absence de trois à quatre ans lui porterait le coup mortel. Balancé moi-même entre deux sentiments impérieux, la piété filiale et le désir de voyager[...] Jugez, citoyen, combien ma position est pénible'.

55 Leschenault, "Extrait" 1-2: 'Notre traversée jusqu'à la Nouvelle Hollande fut très heureuse et nous n'eûmes d'autres déplaisirs que celui que nous fit éprouver l'absence de nos camarades qui étaient restés à l'Île de France. Pendant cette traversée, nous vîmes un grand nombre de damiers [...]'.

56 Leschenault, "Extrait" 117: 'Son retard ne nous laissait presque plus aucun doute qu'elle n'eût fait naufrage. Notre pensée nous rappelait nos malheureux compagnons, elle nous

It is clear that Leschenault conceives his journal not simply as a forum for the observation of natural phenomena and unfolding events, but as a means for recording and communicating his emotional responses to what he observes and experiences. During the stay in Timor, where the gardener Anselme Riedlé and other members of the crew died from disease, Leschenault suffers from an intense feeling of homesickness, which gives rise to this striking passage:

Mother, my brothers, friends – you for whom I chiefly write this account while I am so far away – your affection is no doubt clouded with anxiety when you ponder my fate; but may your tender concern find reassurance five thousand leagues from my homeland, as I recall just a small part of the love you always showed me ... Mother ... at this word my heart crosses the intervening distance and presses affectionately against your maternal breast.⁵⁷

Leschenault unconcernedly combines a wide range of registers in his journal, and does not seem to think any particular register unsuitable for any part of his audience. If the tenor of his journal at times resembles that of Ledru's letter to Jussieu, it may be contrasted with the tone which another visitor to New Holland, Joseph Banks, uses in recording his own thoughts. In an entry of 3 September 1770, Banks addressed the same topic, homesickness, as the *Endeavour* prepared to leave New Guinea:

The greatest part of [the crew] were now pretty far gone with the longing for home which the physicians have gone so far as to esteem a disease under the name of nostalgia; indeed I can hardly find anybody in the ship clear of its effects but the captain, Dr Solander and myself, indeed we three have been in constant employment for our minds which I believe to be the best if not the only remedy for it.⁵⁸

présentait le tableau déchirant de nos amis périssant au milieu des flots, ou errant sur une côte sauvage. Ces pensées fatigantes et sinistres furent enfin remplacées par des sensations plus douces [le jour où] on vit paraître à l'ouest un bâtiment [...] et la joie remplit entièrement nos âmes'.

- 57 Leschenault, "Extrait" 112-113: 'Ma mère, mes frères, mes amis, vous pour qui principalement j'écris cette relation, pendant que je suis éloigné de vous, votre tendresse s'inquiète sans doute sur ma destinée; mais que votre amitié se tranquillise à cinq mille lieues de ma patrie, je retrouve une partie des soins que vous me prodiguâtes toujours ... Ma mère ... à ce nom mon cœur franchit l'espace, il se presse affectueusement contre le sein maternel'.
- 58 Banks Joseph, *The Endeavour Journal of Joseph Banks, 1768-1771*, ed. J.C. Beaglehole, 2 vols. (Sydney: 1962) vol. 2, 145.

Banks discusses this emotion as a detached observer, as though cataloguing the symptoms of a disease, while Leschenault records his own emotion employing the contemporary language of sensibility. The two young authors were influenced by markedly different cultures. Banks was indebted to that of the Royal Society which, holding to the legacy of Francis Bacon, abjured 'figured language',⁵⁹ and preferred a style of natural history writing that was plain and purposive, 'empiricist, uncontroversial and polite, intended to persuade readers that the writer was a reliable witness'.⁶⁰ Leschenault writes in obedience to a different set of conventions, which seem to encompass those of private correspondence, sentimental empiricism, and the novels of sensibility.

A great variety of printed prose works undoubtedly influenced Leschenault's narrative descriptions of nature. In the period prior to Leschenault's travels, there were many intersections between technical botanical writing, travel writing and works of fiction. An influential literary figure such as Rousseau spanned all three genres: he composed a botanical dictionary, recounted his botanising expeditions, and described both pastoral and wild scenery in his fiction. Bernardin de Saint-Pierre similarly practised both natural history writing and sentimental fiction, and served briefly as the head of the Jardin du Roi. And it was common for naturalist writers to express their sensibilities in praising nature and its beauties.⁶¹ In describing his method in *Les Rêveries d'un promeneur solitaire* (1782), Rousseau insists on the intimate relation between close observation and sentimental expression:

I shall perform on myself [...] the experiments that physicians conduct on the air in order to learn its daily condition. I shall apply the barometer to my soul.⁶²

Leschenault, while offering detailed descriptions of natural phenomena in accordance with his instructions, also supplies an empirical record of his emotive responses and a measurement of his sensibility.

59 See Stafford B.M., *Voyage into Substance: Art, Science, Nature, and the Illustrated Travel Account, 1760-1840* (Cambridge, Mass.: 1984) 35.

60 Fulford T. – Lee D. – Kitson P., *Literature, Science and Exploration in the Romantic Era: Bodies of Knowledge* (Cambridge: 2004) 94; see also Gascoigne J., "The Royal Society, Natural History and the Peoples of the "New World(s)", 1660-1800", *British Journal for the History of Science* 42 (2009) 539-562.

61 See Spary, *Utopia's Garden* 207.

62 Rousseau Jean-Jacques, *Œuvres complètes*, ed. B. Gagnebin – M. Raymond, 5 vols. (Paris: 1959-1995) vol. 1, 1000-1001: 'Je ferai sur moi-même [...] les opérations que font les physiciens sur l'air pour en connaître l'état journalier. J'appliquerai le baromètre à mon âme'.

A number of critics have traced the way in which a new 'feeling for nature' arose in eighteenth-century France, and developed in garden design, landscape painting and literature over the century.⁶³ Writers initially adapted the classical tropes of pastoral writing, but gradually began to take greater interest in wild places, such as mountains, moving from the lower, unthreatening slopes to the high peaks in the last few decades of the century.⁶⁴ Rousseau's popular novel *Julie, ou la Nouvelle Héloïse* marked an important development: in it the main character Saint-Preux describes his impressions of the high mountains in different regions of Switzerland, which made a strong impact on the public imagination. As Donald Charlton points out, however, Rousseau was less concerned with the detail of the scenery he described than with the 'psychological impact' of the scenery on his characters – that is to say with 'les sentiments de la nature' ('the feelings evoked by nature').⁶⁵ Wild places – seascapes along with mountain peaks – could inspire various responses: a sense of beauty, harmony or moral purity, but also feelings of melancholy or horror.

The techniques Leschenault uses in his descriptions of nature seem to vary according to his focus: when he works in close-up, describing the detailed features of a plant, he opts to employ terminology of the sort found in Jussieu's *Genera plantarum* or Ventenat's *Le Tableau du règne végétal*. When he widens his focus, however, and starts to describe his general impressions of a landscape, or the sights of land he sees from the deck of the ship, his model is no longer that of the botanists of the Muséum d'Histoire Naturelle, and his descriptions seems to derive more from the literary descriptions of nature that appeared in the latter part of the eighteenth century. Leschenault tends to describe Australasian landscapes in general and somewhat vague terms and, like Rousseau, is concerned with his own aesthetic, emotional and moral reactions. The tropical landscapes frequently have a pleasing pastoral character, and he describes the shoreline of Timor as 'smiling' and the Sema channel as having a 'romantic aspect'.⁶⁶ At times, the scenery of New Holland provokes similar agreeable associations. His first glimpse of the interior of the South-West

63 See Mornet D., *Le Sentiment de la nature en France de J.J. Rousseau à Bernardin de Saint-Pierre* (Paris: 1907) and Ehrard J., *L'Idée de nature en France dans la première moitié du dix-huitième siècle*, 2 vols. (Paris: 1963).

64 See Van Tieghem P., *Le Sentiment de la nature dans le préromantisme européen* (Paris: 1960) 155-198.

65 Charlton D.G., *New Images of the Natural in France: a Study in European Cultural History, 1750-1800* (Cambridge: 1984) 35.

66 Leschenault, "Extrait" 117, 45: 'aspect romantique', 'riantes'. Compare with Rousseau's beginning of the Cinquième promenade: Rousseau Jean-Jacques, *Rêveries du promeneur solitaire*, ed. M. Crogiez (Paris: 2001) 103. 'Les rives du lac de Bienne sont plus sauvages et romantiques que celles du lac de Genève [...], mais elles ne sont pas moins riantes'. I

of the continent prompts this description: 'I gazed admiringly across a flat country which is covered with very large trees, forming a magnificent forest.'⁶⁷ A site on the North-East coastline of Van Diemen's Land reminds him of a classical ruin:

From a distance the sharp, scattered rocks look like rubble, and lend this tongue of land the appearance of an ancient ruined city [...]. Inland, a few isolated rocks can be seen, which fancy lends the form of ancient monuments. Smoke rising through the trees from native fires, clear skies and a tranquil firmament compose a scene that is both picturesque and imposing.⁶⁸

In a case such as this, in which the landscape appears tranquil rather than threatening, Leschenault views it through the prism of the classical pastoral tradition, fusing the old world, however, with the new. The southern coastline of the island strikes him as more dramatic and menacing, but is also considered worthy of the painter's brush:

The land around this cape is very different to the western coast of New Holland. Everything is uniform there, while here, on the contrary, the coast is steep and broken: tall basalt columns, which rise in needles and complete, in this region of the world, the final pieces in the structure of the globe; great masses of granite, which time and the frequent storms of these parts have only gently furrowed. The inaccessible forests that crown this region offer a sight that is worthy of treatment by a skilful artist's crayon. Gloomy weather, but calm. Masses of cloud vapour swirling through the trees, whose withered crowns attest to their vast age, increase the majesty of the scene. We were about to pass into the southern seas, that stage for the great discoveries made one after the other across half a century by illustrious European navigators. In recalling the achievements of these great men, however, I am chilled to my soul as I retrace

thank Paul J. Smith who pointed this first recorded use of the word 'romantic' to describe a landscape.

67 Leschenault, "Extrait" 9: 'je contemplai avec admiration un pays plat, couvert de très gros arbres, qui formaient une forêt magnifique'.

68 Leschenault, "Extrait" 175: 'Les roches pointues et éparses semblables de loin à des décombres donnent à cette langue de terre l'aspect d'une ancienne ville ruinée [...]; dans l'intérieur des terres, quelques roches isolées, auxquelles l'imagination prête la forme d'anciens monuments; la fumée des feux des naturels s'élevant du milieu des arbres, un ciel pur, un atmosphère calme offrait un tableau pittoresque et imposant'.

the terrible and tragic ends which several of them met! ... The immortals, Cook, La Pérouse, de Langle, d'Entrecasteaux, Marion, Lamanon, died far from their homelands, laid low by their own virtuous natures and their love of science!⁶⁹

The progression that occurs in this passage is somewhat characteristic of Leschenault's landscape descriptions. He begins with empirical observation, describing the types and forms of the rocks in this region, and then moves on to broader conjectures and theories, and finally expresses his emotional response to what he is witnessing. In both examples, Leschenault draws attention to his act of interpretation by suggesting that the scenes are suitable for treatment by an artist. In these two responses to the Australian landscape, Leschenault employs tropes of the pastoral and the natural sublime, which have become associated of course with literary Romanticism, and which bring in their train a great variety of emotions.

It is also worth noting that in his descriptions of the indigenous peoples of New Holland, Van Diemen's Land and Timor, Leschenault closely integrates detailed physical description with moral and sentimental judgement. At times he begins by describing the characteristics of the indigenous peoples in the same detached way that he might catalogue the features of a plant. He writes of the inhabitants of Bruny Island:

These people have the following general facial characteristics: a sunken brow, deep-set eyes, a nose which is large but not flattened, a wide mouth filled with strong teeth, and a prominent square jaw [...] the faces of the mature males were reflective of treachery and spite.⁷⁰

69 Leschenault, "Extrait" 131-132: 'Les terres de ce cap sont bien différentes des côtes occidentales de la Nouvelle Hollande, là tout est uniforme, ici, au contraire la côte est abrupte et hachée, les hautes colonnes basaltiques qui s'élèvent en aiguilles et terminent en cette partie du globe l'édifice du monde, les masses énormes des granits que le temps et les orages habituels de ces contrées n'ont pu que faiblement sillonner. Les forêts inaccessibles qui les couronnent offrent une perspective digne d'exercer un crayon habile, un temps sombre mais calme, des masses de vapeurs nuageuses qui s'agitaient au travers des arbres dont les cimes desséchées attestaient l'ancienneté, ajoutaient à la majesté de ce spectacle; nous allions entrer dans les mers du Sud, théâtre des grandes découvertes faites successivement depuis un demi-siècle par d'illustres navigateurs européens, mais en se rappelant les travaux de ces grands hommes l'âme se retrace avec saisissement la fin funeste et tragique de plusieurs d'entre eux! ... Les immortels Cook, La Pérouse, de Langle, d'Entrecasteaux, Marion, Lamanon, périrent loin de leurs patries, victimes de leur humanité et de leur amour pour les sciences!'

70 Leschenault, "Extrait" 143: 'les caractères généraux de la figure de ce peuple sont un front couvert, des yeux enfoncés, le nez gros sans être écrasé, une bouche grande et bien

Physical descriptions of the indigenous peoples, however, inevitably modulate into moral reflections; empirical observation is accompanied by sentimental expression. After an incident on Bruny Island in which the locals threw spears at a retreating French longboat, Leschenault questions the sentimentalised image of the noble savage and the notion that man in a state of nature was inherently good. In this case, the theory cannot stand up to the evidence Leschenault has accumulated:

I admit that I am surprised, after all the instances of cruelty and betrayal reported in voyages of discovery, to hear sensible people say that men in their natural state are not in the least part malicious.⁷¹

Leschenault is responding of course to Rousseau's contentions about man in a state of nature, set out in the *Discours sur l'origine et les fondements de l'inégalité parmi les hommes* (1755), and the ensuing debate around this question. In his journal Leschenault moves constantly between detailed descriptions of natural phenomena and his own sentimental and moral responses to what he has witnessed, and gives expression to his epistolary, literary, naturalist and moral sensibilities. The line between these modes of feeling and thinking is not always clear-cut of course, and at times they seem to coalesce.

It might perhaps be thought that a catalogue of plant descriptions, of the type found in Leschenault's notebooks, would offer less scope than his journal for emotive expression. In the notebooks he supplies a precise description in Latin of each new plant he discovers. In the case of each shrub, he offers details about its wood, bark, branch structure, leaves, calyx, flowers, corolla, stamens, filament, anthers, and style, along with the number of its stigmas and pistils, and observations on where it was found growing. He provides drawings of significant features. Leschenault also adds information on the names he selects for the new plants. In the case of the shrub he calls *Piquetia tomentosa*, he explains:

Piquetia from the name of Piquet, physician in Châlons-sur-Saône, as a mark of friendship. I embrace you with all my heart, that it may cross the intervening distance and repose in joy among friends.⁷²

meublée, le menton saillant et carré [...] le visage des hommes faits réfléchissait la méchanceté et la trahison'.

71 Leschenault, "Extrait" 143: 'j'avoue que je suis surpris après tant d'exemples de trahison et de cruautés rapportés dans tous les voyages de découvertes d'entendre dire à des personnes sensées que les hommes de la nature ne sont point méchants'.

72 Leschenault, botanical notebooks, Paris, Muséum National d'Histoire Naturelle, Fonds Phanérogamie, book 1, fol. 8r: '*Piquetia ex dominio Piquet medico in Cabillonanri* [sic]

For each of the twenty-five plants he names, he offers a tribute to the person for whom it is named – with these figures including members of the government, scientists, colleagues aboard the expedition, and friends and family in France. As in his journal, the language of sensibility contrasts starkly here with more detached, impersonal description.

The instructions given to the naturalists by the authorities had emphasised the importance of precise observation, making little allowance for the expression of private sentiments. But the notebooks, for Leschenault, like his journal, were not a simple catalogue of impersonal empirical description: he considered the observer to be a philosopher of sensibility. Even if Jussieu was starting to move towards a view of observation and description more closely aligned to that of the Royal Society, Leschenault was nevertheless a ‘sentimental empiricist’ by attitude and inclination, and was influenced by literary attitudes towards nature and epistolary conventions of the time. The notebooks make clear what the journal repeatedly attests: for Leschenault, the description of natural phenomena was also the record of a sensibility.

Selective Bibliography

- Banks Joseph, *The Endeavour Journal of Joseph Banks, 1768-1771*, ed. J.C. Beaglehole, 2 vols. (Sydney: 1962).
- Baudin Nicolas, *Journal du voyage aux Antilles de la Belle Angélique, 1796-1798*, ed. M. Jangoux (Paris: 2009).
- Baudin Nicolas, *Mon voyage aux terres australes: journal personnel du commandant Baudin*, ed. J. Bonnemains (Paris: 2000).
- Buffon, Georges-Louis Leclerc, comte de, “Premier discours: de la manière d’étudier et de traiter l’histoire naturelle”, in *Histoire naturelle, générale et particulière*, 36 vols. (Paris, L’Imprimerie Royale: 1749-1788).
- Charlton D.G., *New Images of the Natural in France: a Study in European Cultural History, 1750-1800* (Cambridge: 1984).
- Clode D. – Harrison C.E., “Precedence and Posterity: Patterns of Publishing from French Scientific Expeditions to the Pacific (1785-1840)”, *Australian Journal of French Studies* 50, 3 (2013) 361-379.
- Cook A., *Jean-Jacques Rousseau and Botany: the Salutary Science* (Oxford: 2012).

urbe. Pignus amicitia. Save [sic] cor meum spatium transilit et inter amicos jucunde reponit’. The notebooks have been transcribed by Jangoux M. – Desmet V. – Lefebvre C., “The Baudin Legacy”, www.sydney.edu.au/arts/research/ baudin, consulted 31 January 2015.

- Daston L. – Galison P., *Objectivity* (New York: 2007).
- Desmet V. – Jangoux M., “Un naturaliste aux terres australes: Jean-Baptiste Leschenault de la Tour (1773-1826)”, in Jangoux M. (ed.), *Portés par l'air du temps: les voyages du capitaine Baudin* (Brussels: 2010) 225-232.
- Destutt de Tracy Antoine, *Éléments d'idéologie. Première partie: Idéologie, proprement dite*, 2nd ed. (Paris, Courcier: 1804).
- Encyclopédie, ou dictionnaire raisonné des sciences, des arts et des métiers, par une société de gens de lettres*, 35 vols. (Paris: 1751-1780).
- Ehrard J., *L'Idée de nature en France dans la première moitié du dix-huitième siècle*, 2 vols. (Paris: 1963).
- Fornasiero J. – West-Sooby J., “Baudin's Books”, *Australian Journal of French Studies* 39, 2 (2002) 215-249.
- Fulford T. – Lee D. – Kitson P., *Literature, Science and Exploration in the Romantic Era: Bodies of Knowledge* (Cambridge: 2004).
- Gannier O., “La compilation et l'usage des journaux de bord dans l'histoire des idées et des sciences”, in Linon-Chipon S. – Vaj D. (eds.), *Relations savantes: voyages et discours scientifiques* (Paris: 2006).
- Gascoigne J., “The Royal Society, Natural History and the Peoples of the “New World(s)”, 1660-1800”, *British Journal for the History of Science* 42 (2009) 539-562.
- Goethe Johann Wolfgang von, *Scientific Studies*, ed. and trans. D. Miller (New York: 1988).
- Harrison C.E., “Projections of the Revolutionary Nation: French Expeditions in the Pacific, 1791-1803”, *Osiris* 24, 1 (2009) 33-52.
- Horner F., *The French Reconnaissance: Baudin in Australia, 1801-1803* (Melbourne: 1987).
- Israel J., *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man, 1670-1752* (Oxford: 2006).
- Jangoux M. – Desmet V. – Lefebvre C., “Les Carnets botaniques de Théodore Leschenault”, “The Baudin Legacy”, www.sydney.edu.au/arts/research/audin, consulted 31 January 2015.
- Jangoux M., *Le Voyage aux terres australes du commandant Nicolas Baudin: genèse et préambule (1798-1800)* (Paris: 2013).
- Jussieu Antoine-Laurent de, “Instructions rédigées par M. de Jussieu pour les naturalistes de l'expédition”, in Ledru André-Pierre, *Voyage aux îles de Ténériffe, La Trinité, Saint-Thomas, Sainte-Croix et Porto-Ricco, exécuté par ordre du gouvernement français, depuis le 30 septembre 1796 jusqu'au 7 juin 1798, sous la direction du capitaine Baudin, pour faire des recherches et des collections relatives à l'histoire naturelle*, 2 vols. (Paris, Arthus Bertrand: 1810).
- Leask N., *Curiosity and the Aesthetics of Travel Writing, 1770-1840: 'From an Antique Land'* (Oxford: 2002).

- Locke John, *An Essay concerning Human Understanding* (London, Elizabeth Holt: 1690).
- Milet-Mureau Louis Antoine, *Voyage de La Pérouse autour du monde*, 4 vols. (Paris, L'Imprimerie de la République: 1796-1797).
- Mornet D., *Le Sentiment de la nature en France de J.J. Rousseau à Bernardin de Saint-Pierre* (Paris: 1907).
- Péron François – Freycinet Louis de, *Voyage de découvertes aux terres australes, exécuté par ordre de sa majesté l'Empereur et Roi, sur les corvettes Le Géographe et Le Naturaliste et la goélette Le Casuarina pendant les années 1800, 1801, 1802, 1803, et 1804*, 4 vols. (Paris, L'Imprimerie Impériale: 1807-1816).
- Riskin J., *Science in the Age of Sensibility: the Sentimental Empiricists of the French Enlightenment* (Chicago: 2002).
- Roger J., *Buffon: a Life in Natural History*, trans. S.L. Bonnefoi, ed. L. Pearce Williams (Ithaca: 1997).
- Rousseau Jean-Jacques, *Œuvres complètes*, ed. B. Gagnebin – M. Raymond, 5 vols. (Paris: 1959-1995).
- Rousseau Jean-Jacques, *Rêveries du promeneur solitaire*, ed. M. Crogiez (Paris : 2001).
- Sankey M., "Writing the Voyage of Scientific Exploration: the Logbooks, Journals and Notes of the Baudin Expedition (1800-1804)", *Intellectual History Review* 20,3 (2010) 401-413.
- Senebier Jean, *L'Art d'observer* (Geneva, Claude Philibert and Barthélemy Chirol: 1775).
- Sloan P.R., "The Buffon–Linnaeus Controversy", *Isis* 67, 3 (1976) 356-375.
- Spary E.C., *Utopia's Garden: French Natural History from Old Regime to Revolution* (Chicago: 2000).
- Stafford B.M., *Voyage into Substance: Art, Science, Nature, and the Illustrated Travel Account, 1760-1840* (Cambridge, Mass.: 1984).
- Stevens P.F., "How to Interpret Botanical Classifications – Suggestions from History", *BioScience* 47, 4 (1997) 243-250.
- Stevens P.F., *The Development of Biological Systematics: Antoine-Laurent de Jussieu, Nature, and the Natural System* (New York: 1994).
- Van Tieghem P., *Le Sentiment de la nature dans le préromantisme européen* (Paris: 1960).

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